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Preliminary Evaluation of the City of Houston (Texas) Department of Health's Programs to Regulate Air Pollution from Stationary Sources

Booz-Allen and Hamilton, Inc.
Bethesda, MD

Prepared for

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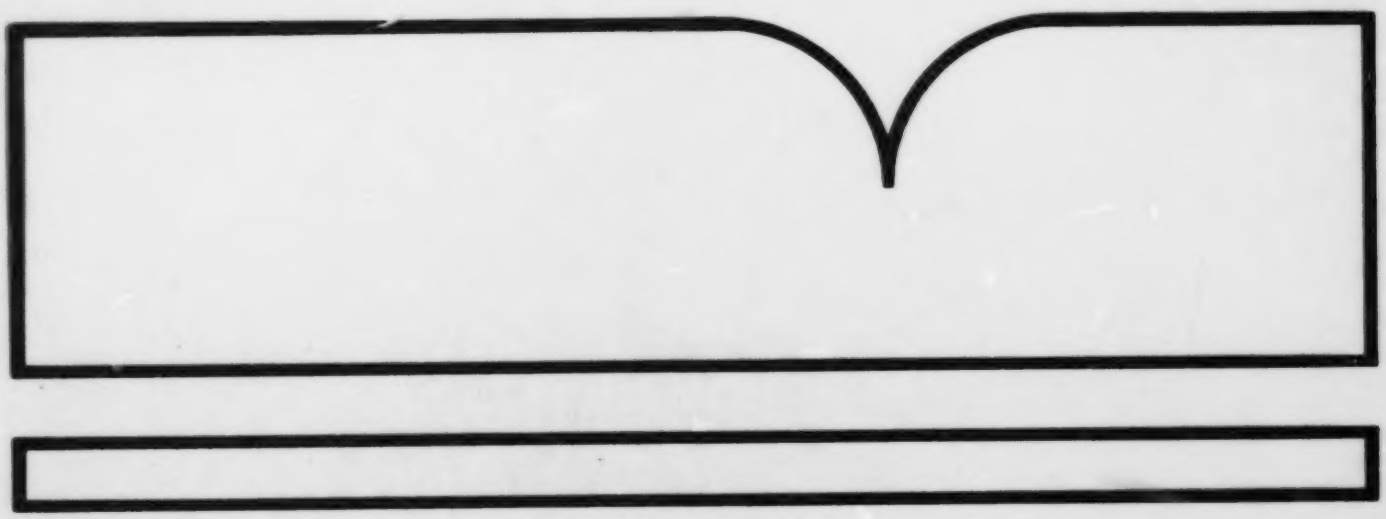

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CEQ and EPA sponsored five studies examining the response of sources to the regulatory approach to controlling air pollution, with emphasis on the post-compliance emissions history. The study areas are: North Carolina (3 vols), Houston (3 vols), San Diego (3 vols), Chicago (3 vols), and New Jersey (2 vols).

This report on Task I describes and evaluates the air pollution control program administered by the Houston Department of Health. It is based on interviews with staff of the DoH, the Texas Air Control Board, the Attorney General's Office, and the Houston Legal Department as well as written documents and records.

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FINAL REPORT

Preliminary Evaluation of The City of Houston (Texas) Department of Health's Programs to Regulate Air Pollution From Stationary Sources

JUNE 1, 1979

PREPARED FOR

PRESIDENT'S COUNCIL ON ENVIRONMENTAL QUALITY

OFFICE OF PLANNING AND
EVALUATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

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TABLE OF CONTENTS

		Page Number
I.	EXECUTIVE SUMMARY	I-1
	1. Overview of Air Pollution Control in Houston	I-1
	2. Precompliance and Postcompliance Programs	I-3
	3. Preliminary Evaluation	I-7
II.	INTRODUCTION	II-1
III.	OVERVIEW OF AIR POLLUTION CONTROL	III-1
	1. Air Pollution Control at the State Level	III-1
	2. Air Pollution Control at the Local Level	III-9
IV.	PRECOMPLIANCE AND POSTCOMPLIANCE PROGRAMS	IV-1
	1. Precompliance Programs	IV-1
	2. Postcompliance Programs	IV-6
V.	PRELIMINARY EVALUATION	V-1
	1. Significant Strengths	V-1
	2. Potential Problems	V-5

APPENDIX A -- Entry Level Salaries

APPENDIX B -- Position Descriptions

APPENDIX C -- Houston Air Pollution Control Program—Manpower, Salary Ratings and Total and Average Salaries

APPENDIX D -- Samples of Records Kept by DOH

APPENDIX E -- Summary of TACB Regulations Pertaining to Stationary Source Compliance

APPENDIX F -- Summary of Enforcement Time Frames for Five Sample Cases

APPENDIX G -- Cases, Sanctions, and Compliance Status of All DOH Cases from 1975-1978

L I S T O F E X H I B I T S

		Page Number
I-1	State and Local Program Functions	I-2
III-1	Texas Air Control Board Organization	III-2
III-2	Houston Air Pollution Control Section Department of Health	III-10
III-3	Budget and Manpower Estimates of Air Pollution Control Section Houston Department of Health	III-13
III-4	Estimation of DOH Air Pollution Control Program Output Costs	III-14
III-5	Comparison of Federal and City Expenditures for Air Pollution Control for the City of Houston	III-15
III-6	DOH Record Keeping Summary	III-18
IV-1	Texas Variance Process	IV-5
IV-2	Permit Program Requirements	IV-7
IV-3	Number of Permits Processed by the Houston Air Pollution Control Program 1974-1978	IV-9
IV-4	Texas Permit Process	IV-10
IV-5	Summary of Surveillance Activities	IV-16
IV-6	Number of Inspections by the Houston Department of Health 1970-1974	IV-19
IV-7	Summary of Enforcement Activity	IV-22
IV-8	Flow Chart of Enforcement Process Showing Number of Enforcement Cases Processed in 1977	IV-24

I. EXECUTIVE SUMMARY

This interim, report describes and evaluates the air pollution control program administered by the City of Houston (Texas) Department of Health. The report is based on interviews with staff of the City of Houston Department of Health, the Texas Air Control Board (TACB), the Texas Attorney General's Office, and the City of Houston Legal Department together with a review of written documents and records. This summary of the report is divided into three parts:

- Overview of Air Pollution Control in Houston
- Precompliance and Postcompliance Programs
- Principal Findings.

1. OVERVIEW OF AIR POLLUTION CONTROL IN HOUSTON

The City of Houston Department of Health air pollution program derives its principal authority from the Texas Clean Air Act. The Texas Clean Air Act, which establishes the Texas Air Control Board (TACB), provides the authority for a state air pollution control program and also provides for local air pollution programs as long as local ordinances are consistent with state authority. Because many of the responsibilities of the City of Houston Department of Health were recently delegated, several aspects of the state and local program overlap. The exhibit on the following page lists the important state and local program functions in Houston. As this exhibit indicates, the state focuses on regulation development and the administration of the permit program, while the city concentrates on enforcement and surveillance activity.

In discussing the overlap of jurisdiction between state and local agencies, it should also be noted that the Harris County Department of Health responds to

EXHIBIT I-1
State and Local
Program Functions

Activity	Houston Department of Health	Texas Air Control Board
Control strategy and regulation development	Recommends changes to state	Primary responsibility
Permitting	. Sole responsibility for incinerators . Reviews permit applications of new and modified sources and makes recommendations to state	. Primary responsibility for issuance of permits for new and modified sources
Surveillance	. Primary responsibility for performance of SIP inspections to determine source compliance . Primary responsibility for responding to complaints in Houston	. Tracks progress using computerized source investigation system . Analyzes air quality samples
Enforcement	Primary responsibility to enforce Texas regulations within Houston	. Performs stack test when requested by city. . Provides litigation assistance

complaints within Harris County, although the county is not part of the state program. In some instances, jurisdictional overlap between state, city, and county programs may result in confusion on the part of sources. This happens especially in the Houston Ship Channel because the city has jurisdiction over those sources within the ship channel but not those sources in the surrounding area. Therefore in some instances, particular sources have some emission points subject to city jurisdiction and other emission points in the same facility under the jurisdiction of the state and county.

The state's strategy for controlling pollutants from stationary sources consists of a wide variety of standards and regulations applying to existing sources, as well as stringent requirements applying to new and modified sources. Because Texas has many different types of regulations applying to existing sources, the city has a variety of different surveillance and enforcement options to choose from in implementing its control programs.

2. PRECOMPLIANCE AND POSTCOMPLIANCE PROGRAMS

The precompliance and postcompliance programs cover the regulatory process on both the state and local level from the perspective of sources in the Houston area.

(1) Precompliance Programs

The precompliance programs describes the development of Texas regulations before and after the preparation of the state implementation plan. In addition, the permit and surveillance programs are discussed.

1. Regulatory Development

During the period immediately prior to the development of the State Implementation Plan in 1970, Texas established ambient standards and

developed regulations to meet those standards for particulate matter and sulfur oxides. The ambient standards were more stringent than the national ambient air quality standards (NAAQS) later established. During the period from 1968 to 1971, regulations were added for opacity florides and agricultural processes.

In 1971, Texas developed a plan for attaining and maintaining the National Ambient Air Quality Standards (NAAQS) in accordance with Section 110 of the Clean Air Act of 1970. As part of the state implementation plan, an emissions inventory was developed, new regulations were written, and Houston was chosen as an example region to test the effectiveness of the new regulations in meeting the NAAQS for particulate matter and sulfur oxide. In both cases, the NAAQS were met.

2. Permit Preparation and Surveillance

Texas used the variance procedures mandated by the Texas Clean Air Act as the permit mechanism for sources not in compliance with the regulations. Typically, a source unable to comply with the regulations would petition the TACB for a variance. Once issued, the variance would include a compliance schedule containing the dates that the source would contract, build, and complete construction of the appropriate control equipment. The TACB would then perform a stack test to verify final compliance.

During this period, the major effort of the TACB was directed toward requiring major sources to install control equipment through the variance process. Where a source refused to install control equipment, the TACB would refer the case to the Attorney General's Office to file a civil action against the source. Once a

source was legally bound to the installation of control equipment by a TACB variance or a court imposed schedule, the TACB monitored the source's progress primarily by oversight of the reporting requirements in the schedule itself and by responding to citizen's complaints.

(2) Postcompliance Programs

The postcompliance programs include the permit, surveillance, and enforcement programs currently being administered by the Houston Department of Health.

1. Permits

Texas substantive and procedural requirements imposed on new sources are particularly intensive. Since 1973 all new and modified sources in Texas have been required to install Best Available Control Technology (BACT). This requirement is imposed on sources by permit both during the construction and operation of the facility. Insignificant sources are exempted from the permit process. In addition, incinerators within the city of Houston must be permitted in order to comply with a city ordinance.

Both the city of Houston and the TACB regional office do an engineering evaluation of the process and the control equipment which is proposed. A joint inspection is then conducted. The purpose of the inspection is to verify the information submitted by the source, and to determine whether the proposed location of the facility may constitute a nuisance. The recommendations from the inspections are then sent to TACB headquarters in Austin for an evaluation to determine whether the proposed emission limits are consistent with the NAAQS. If so, the permit is issued. If the permit is denied, the TACB notifies the source in writing explaining the objections. If the source makes the required modifications, the permit is then issued.

2. Surveillance

The surveillance program is made up of four elements:

- General Surveillance involves 24 hour daily surveillance of major sources by automobile, boat, and helicopter
- Annual SIP Inspections involves the investigation of major sources on an annual basis to determine compliance.
- Complaint Investigation involves the investigation of complaints received by the Houston Department of Health.
- Self Reporting for Upsets and Maintenance involves the investigation of sources notifying the Department of Health because of upsets and maintenance violations. The purpose of these investigations is to insure that emissions are minimized during these periods.

3. Enforcement

The city of Houston enforcement program is heavily oriented toward the administrative processing of local complaints. In each year, the overwhelming number of notices of violations (NOV) are issued for nuisance, outdoor burning, fugitive emissions from construction or roads, and local ordinances. The notices of violation detected using opacity, stack tests, or property line samples which can be documented in court average about 2.5 percent of the total. Most of these problems are corrected after an initial contact with the source and the issuance of an NOV from the Department of Health.

If the city of Houston Department of Health does not feel that a source is making progress toward compliance in good faith, the case is then referred to the Houston City Legal Department for litigation. Of the number of cases prepared for litigation and referred to the City Legal Department, only a small proportion of these are later filed. This reflects both the priorities and constraints of the City Legal Department and the case preparation by the Department of Health.

3. PRELIMINARY EVALUATION

Our preliminary evaluation of the Houston Department of Health principal strengths and potential problems are discussed below. A final evaluation of the regulatory program must await an analysis of the performance of specific pollution sources in maintaining compliance.

(1) Significant Strengths

- Air pollution control in Houston has benefitted from the stringent requirements for new sources and the variety of regulations for existing sources established by the TACB.
- The Department of Health is especially effective in the detection of visible emissions and complaint investigation.
- The Houston air pollution control program has especially able leadership.
- The Department of Health has developed good working relationships with other offices responsible for air pollution control on the state, local, and county levels.
- The Department of Health has an effective training program composed of formal meetings and field work.

(2) Potential Problems

- Of the number of cases prepared for litigation and referred to the City Legal Department, only a small proportion of these are later filed.

- An overlap in responsibility occurs in the administration of the permit program that indicates a duplication of effort between the TACB and the Houston Department of Health.

- Surveillance activity relating to sulfur dioxide and hydrocarbon emissions is very limited compared to surveillance relating to particulate matter.

- Turnover at both the top and bottom of the Houston air pollution control program has been great, primarily because of low salaries.

II. INTRODUCTION

The United States Environmental Protection Agency (EPA) and the President's Council on Environmental Quality have requested Booz, Allen & Hamilton to conduct an evaluation of the City of Houston Department of Health pollution control program as part of a five state study to evaluate the effectiveness of air pollution regulations. The three tasks which will compose the complete study include:

- Task I - An Analysis of the Regulatory Process
- Task II - An Analysis of Source Performance
- Task III - An Interpretation of the Results

This Task I report provides a review and preliminary evaluation of the air pollution program relating to stationary sources which is administered by the Houston Department of Health. The report defines the public cost of each program activity and makes a preliminary assessment of the critical strengths and potential problems of the agency's program. State programs are discussed only where necessary to describe fully the regulatory requirements imposed on stationary sources within the Houston city limits. Because the purpose of this study is to focus on the regulatory requirements imposed on stationary sources, only regulations concerning particulate matter, sulfur oxides and hydrocarbon are discussed. The programs examined fall into the following four regulatory phases:

- Pre-permitting: The period prior to the implementation of the Clean Air Act of 1970
- Permit preparation: The period during which the state develops enforceable emissions limitations
- Construction: The phase during which the sources adopt the control equipment and processes necessary to meet emissions limits
- Continuing compliance: The phase during which the source is expected to remain in compliance.

The first three phases are reviewed together as precompliance programs, and the fourth phase is examined separately as the postcompliance program. The postcompliance programs are described in greater detail as the precompliance programs are discussed primarily to provide historical perspective.

The information contained in this report was obtained through in-depth interviews with staff members of the City of Houston Department of Health, the Houston Legal Department, the Texas Air Control Board, and the Texas Attorney General's Office. Interview data was supplemented by a review of a variety of written documents such as the State Implementation Plan (SIP).

The review and evaluation of Houston air pollution program is presented in three main chapters. The following chapter presents an overview of air pollution control in the State of Texas. This overview first describes the organization, authority, and responsibilities of state level agencies. Next, it describes the specific standards and regulations affecting stationary sources. The overview concludes with a description of the City of Houston Department of Health including its organization, personnel, program costs, authorities, and record-keeping practices.

Following the overview is a discussion of precompliance and postcompliance programs. In chapter IV the section on precompliance programs describes the regulatory development, permit preparation, and surveillance programs at the state level primarily to provide the historical perspective necessary to understand fully the postcompliance programs. The section on postcompliance program describes the permits, surveillance, and enforcement programs currently being administered by the City of Houston Department of Health.

The report concludes with a presentation of preliminary findings on the City of Houston Department of Health's program strengths and potential problems. It is important to emphasize that the evaluation of the strengths and weaknesses of the agency programs is a preliminary one. For the purposes of this project, agency effectiveness is to be measured in terms of the attainment and maintenance of a specified level of reduction in stationary source emissions. At this point in the study, having not yet completed the source reviews, there is little hard data on how successful the agency has been in fostering continued emissions reductions. Nor is it possible at this point to compare

the programs of the City of Houston Department of Health with the programs of air pollution control agencies in any other jurisdictions. Therefore, as the study progresses, the preliminary assessments provided in this report will be refined in light of the additional data gathered.

III. OVERVIEW OF AIR POLLUTION CONTROL

This chapter contains a description of the organization, authorities, and functions of both state and local air pollution control agencies. In addition, it provides a summary of the specific emissions standards applicable to stationary sources.

1. AIR POLLUTION CONTROL AT THE STATE LEVEL

This section describes the organization and functions of those sections within the Texas Air Control Board (TACB) and the Attorney General's Office responsible for air pollution control and summarizes the ambient and emission standards under which stationary sources are regulated. The discussion of standards in this chapter focuses on regulations in force now. Chapter IV provides an overview of the significant changes that have occurred since the program began in 1968.

(1) Organization of the State Level Agencies

According to the Texas Clean Air Act, responsibility and authority for the administration of air pollution abatement and control is vested in the Texas Air Control Board (TACB).

Exhibit III-1 shows the current structure of the TACB. The TACB has the following nine members appointed by the Governor:

- One professional engineer knowledgeable in air control
- One licensed physician with experience in the field of industrial medicine
- One representative from industry
- One representative from municipal government
- One agricultural engineer

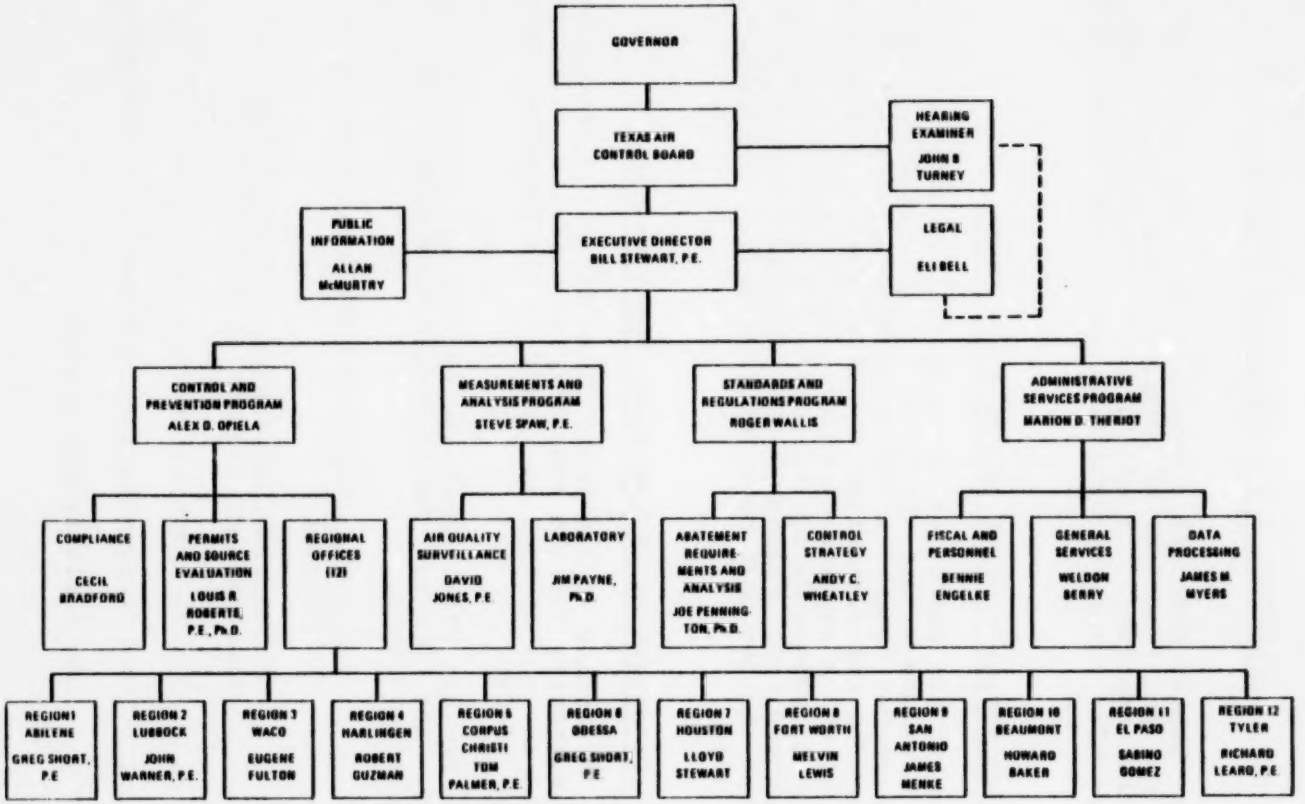

EXHIBIT III-1
Texas Air Control Board Organization

- Four representatives chosen from the general public.

The members of the board hold staggered terms of six years.

The responsibilities of the key operating units of the TACB are summarized below:

- The Control and Prevention Section develops enforcement policy, evaluates source compliance, and administers the permit program.

- The Measurements and Analysis Section administers the state's ambient monitoring program as well as analyzing air quality samples.

- The Legal Division provides counsel to the TACB concerning the interpretation of TACB rules and regulations, and is responsible for case preparation and liaison functions with the State Attorney's Office.

- The Hearing Examiner conducts both rulemaking hearings and hearings related to source or citizen challenges to proposed variances and permits.

Also, the twelve Texas regional office directors report to the Director of the Control and Prevention Section.

As discussed above, another state agency which participates in the air pollution control program is the Attorney General's Office. This office provides official interpretations of air quality statutes and regulations, as well as representing the TACB in court proceedings. By law, the TACB is a necessary and indispensable party to all civil suits filed under TACB regulation by local government.

(2) Authorities and Responsibilities

The Texas Clean Air Act empowers the TACB with the following authorities related to stationary source regulation:

- Prepare and adopt state air control plans

- Require emissions data from sources in order to develop an emission inventory
- Enter property to conduct inspections
- Promulgate rules
- Issue orders
- Conduct public hearings
- Establish air quality control regions
- Investigate violations
- Grant variances
- Grant operating and construction permits
- Delegate authority to local governments

In addition to the above authorities, the Act provides for injunctive relief and civil penalties of not less than $50 or more than $1,000 for each act of violation.

(3) Requirements Imposed on Stationary Sources

The State's strategy for controlling pollutants from stationary sources consists of a wide variety of standards and regulations applying to existing sources, as well as an intensive new source review process applying to new and modified sources. This chapter summarizes these specific regulations and emission limitations. These regulations are also displayed in chart form in Appendix E.

1. Requirements for Existing Sources

The types and variety of regulations which are used by Texas to regulate existing sources are particularly diverse. For example, Texas has regulations controlling particulate matter using emission limitations, opacity, process weight, equipment standards, work practice procedures, and a property line ambient standards. Several of these regulations have been helpful in dealing with particulate emission problems in Texas. For

instance, the ambient property line regulation, which may be unique to Texas, has been effective as an enforcement and surveillance tool to regulate fugitive particulate matter and sulfur oxides.

Listed below are the specific standards and regulations used to control particulates from stationary sources:

- Flow Rate Emission Limitations. TACB Reg. 131.03.05 provides emission limitations which correspond to the flow rate of a facility. A stack height adjustment factor is used to give a more stringent emission limitation to those facilities with short stacks and poor dispersion characteristics. Less stringent emission limitations are not given for taller stacks.

- Opacity Standard. TACB Reg. 131.03.03 prohibits visible emissions from any stationary flue to exceed an opacity of 30 percent averaged over a 5-minute period, and 20 percent averaged over a 5-minute period for facilities which began construction after January 31, 1972. These opacity limits may be exceeded for sootblowing, building of a new fire, equipment changes, ash removal, or other maintenance related actions, but for no more than a 5-minute period.

- Property Line Ambient Regulation. TACB Reg. 131.03.05 requires that the net results of subtracting the downwind from the upwind ambient sample taken at a source's property line not exceed the following levels:

  —100 micrograms averaged over 5 hours
  —200 micrograms averaged over 3 hours
  —400 micrograms averaged over 1 hour.

Those standards which are used to regulate minor particulate sources are listed below:

- Outdoor Burning. TACB Reg. 131.03.01 prohibits outdoor burning although several exceptions and notification requirements are also listed in the regulations.

- Incinerators. TACB Reg. 131.03.02 prohibits the use of single chamber incinerators.

- Materials Handling. TACB Reg. 131.03.04 requires hoods, fans, and in some cases wetdown requirements to prevent fugitive particulates from materials handling and road construction.

- Agricultural Processes. TACB Reg. 131.03.07 contains a process weight regulation applicable to all agricultural processes statewide.

- Transient Operations. TACB Reg. 131.03.06 requires transient operations such as portable asphalt plants and concrete plants to install cyclones and wet scrubbers.

The Texas regulations which apply to major SO_2 sources are very similar in type to those applying to particulate matter. Major SO_2 emitters are regulated by the following types of regulations:

- Flow Rate Emission Limitation. TACB Reg. 131.04.01 provides emission limitations which correspond to the flow rate of a facility. As with the particulate sources, a stack height adjustment factor is used to give a more stringent emission limitation to those facilities with short stacks and poor dispersion characteristics. For SO_2 emitters, specific types of sources are regulated. These include:

  —SO_2 plants burning elemental sulfur
  —SO_2 plants burning other than elemental sulfur
  —Nonferrous smelters
  —Steam generators, boilers and heaters burning liquid fuel.

- Property Ambient Regulation. TACB Reg. 131.04.07 prohibits the net ground level concentration of emissions measured at the property line from exceeding .28 pounds per million averaged over any 30-minute period.

In addition to the above general SO_2 regulations applicable to major sources, TACB Reg.131.04.01 requires continuous monitoring of primary smelters. Also, Reg. 131.04.17 allows the TACB to exempt sources from the sulfur oxide emission limitations if technical practicability or economic reasonableness prevents compliance. For such an exemption, a source must install the best available control technology and an ambient monitoring network. In addition, all promulgated sulfur oxide ambient standards must be met.

In regulating hydrocarbons, TACB has not used emission limitations but instead has had to rely on equipment standard regulations which specify storage and use conditions and control devices to prevent evaporation. The regulation makes certain requirements for vapor recovery and specifies handling and discharge conditions.

In addition to regulations which establish requirements for the control of specific pollutants, Texas has regulations which require sources to report excess emissions to the TACB during periods of upset or maintenance and to sample their emissions:

- Upset. TACB Reg. 7 requires sources to notify the TACB as soon as possible after a major upset. Major upsets are defined as periods of excessive emissions which contravene TACB regulations. The source may apply for an exemption from a Rule 7 violation if the cause of the violation is outside the source's control. The TACB decides whether to accept the source's application for an exemption.

- Maintenance. TACB Reg. 8 requires sources to notify the TACB at least 10 days prior to planned maintenance. The TACB may inspect the source to verify that sufficient steps have been taken to limit emissions during maintenance periods.

- Sampling. TACB Reg. 9 requires that upon request from the TACB, sources must do whatever sampling is necessary in order to determine compliance with the regulations.

As will be discussed in Chapter III, many times when a problem exists and a source is apparently not violating one of the above regulations, the Houston Department of Health will cite the source for a violation of one of the general TACB regulations listed below:

- Nuisance. TACB Reg. 131.01.05 prohibits any person from discharging from any source air contaminants which may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property.

- Excessive Visible Emissions. TACB Reg. 131.03.03 prohibits any person from causing or allowing excessive visible emissions from any building or enclosed facility.

2. Requirements Imposed on New Sources

New or modified facilities in Texas are required by the Texas Clean Air Act and by TACB regulations to obtain a construction permit and an operating permit prior to the construction or operation of the facility. The TACB has required that sources install the Best Available Control Technology (BACT) on all new and modified facilities since 1973.

Emission limitations calculated on a facility basis are also required as part of the permit. This emission limitation is derived from the engineering calculations done by both state and local offices. This standard is more stringent than the emission limitation which applies generally to existing facilities. In addition to a source specific emission limitation, monitoring and reporting requirements are also imposed on new sources through the permits mechanism.

2. AIR POLLUTION CONTROL AT THE LOCAL LEVEL

By agreement with the TACB, the Houston Department of Health is the primary agency responsible for the enforcement of Texas regulations within the Houston city limits. The organization, program costs, authority and record-keeping practices of the Air Pollution Control Section of the Department of Health are outlined in the following sections.

(1) Organization

As shown in Exhibit III-2, the organization of the the Air Pollution Control Section of the Department of Health reflects the three major program elements permits, surveillance, and enforcement. The permits section is responsible for the engineering evaluation and the inspection of facilities applying for construction and operating permits under TACB regulations. Also, the permits section administers a permit program for incinerators pursuant to a municipal ordinance. The surveillance section is responsible for Houston's 24-hour surveillance program as well as the annual inspection program to determine source compliance. The enforcement section conducts administrative conferences, issues notices of violation, and prepares cases for referral to the City Legal Department's Office.

Several other agencies on the local level which are important in the air pollution control program include the Harris County Department of Health, the Office of the City Legal Department, and the Office of the County District Attorney. Although not involved with the Texas program, the Harris County Department of Health responds to complaints within Harris County. The Office of the City Legal Department is responsible for representing the Department of Health in civil cases filed pursuant to the Texas Clean Air Act. As stated previously, when these cases are filed, the TACB must be joined by law as a necessary and indispensable party. In some cases when the City Legal Department's Office does not feel civil litigation is appropriate, a case may be referred to the County District Attorney for criminal prosecution pursuant to a Texas criminal misdemeanor statute. Harris County refers cases directly to the County District Attorney.

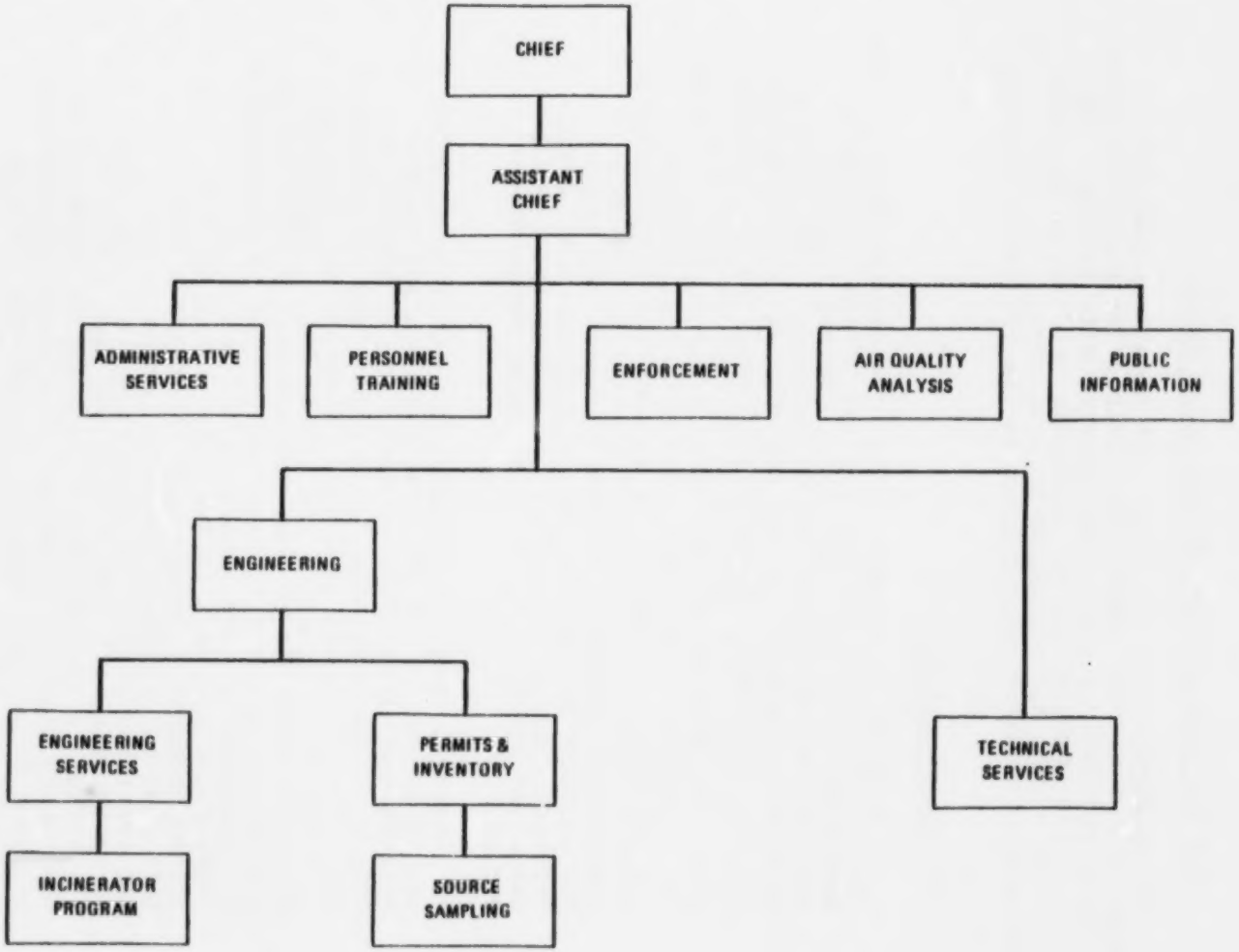

EXHIBIT III-2
Houston Air Pollution Control Section
Department of Health

(2) Personnel

The personnel at the Department of Health must qualify for both the state merit system and the Houston civil service, making the hiring process slow and involved. All entry level positions require a college degree or four years of experience in air pollution control and a high school degree. Typically, salary levels are not competitive with those offered on the state level or in private industry. Also, budget constraints have prevented grade or in-step increases. Appendices A and B give entry level salaries and position descriptions respectively. In addition, manpower and salary data for the program is provided in Appendix C for the years 1970-1975. Data was not aggregated for later years because the air pollution control program personnel information was combined with the Department of Health personnel records in 1974.

The factors constraining salary levels have caused a high turnover rate at both the top and bottom of the air pollution control program. At the top level, although Ken Mackenzie has been involved with the program for four years as Chief of Air Pollution Control, during the preceeding seven-year period, there had been six directors. The table below shows the calculated turnover rates over a ten-year period. Turnover rates for the past ten years were not available from agency personnel so an attempt was made to estimate a rate based on data collected from individual files. Since the number of employees for a given year was not known, the number of budgeted positions was divided into the number of individuals leaving in a given year to derive turnover rate.

	Budgeted Positions	Personnel Who Left	Turnover Rate
1968	36	9	25.0%
1969	41	7	17.0
1970	48	14	29.0
1971	56	6	10.7
1972	58	14	24.0
1973	56	16	28.5
1974	76	12	15.7
1975	74	8	10.8
1976	78	15	19.2
1977	72	17	23.0
1978	74	12	16.2

As shown, these rates range from 10.7 percent in 1972 to 29 percent in 1970. The average turnover rate for the ten year period was 21 percent. This calculated turnover rate is lower than actual turnover because no accounting has been made for vacancies.

(3) Program Costs

One goal of this study was to evaluate the public costs of each program element administered by the Houston Department of Health (DOH). It was hoped that actual expenditures by program element over several years could be analyzed and compared to the outputs generated by those programs. This exercise would help determine the cost effectiveness of each program. Although actual expenditures by program element are not tabulated by the DOH, in the alternative estimates can be made based on budget figures provided in the DOH grant applications.

Several estimates of costs and program outputs are provided on Exhibits III-3, III-4, and III-5. Exhibit III-3 shows the budgeted amount of both Federal and non-Federal dollars for each program element for 1976, 1977, and nine months of 1978, coinciding with the Federal fiscal year. Figure III-4 displays an estimate of DOH program costs per unit of output associated with that program, and Exhibit III-5 shows a comparison of city and Federal total expenditures for air pollution control over a ten year period.

It should be noted that because the activities and expenses which are classified as enforcement, permits, or monitoring, for purposes of the grant applications changed significantly from 1976 to 1978. These figures should not be used as a measure of cost effectiveness.

(4) Authorities

The Houston Department of Health is the primary agency responsible for the enforcement of Texas regulations within the Houston city limits. In addition, the Department of Health is responsible for enforcing a city ordinance requiring incinerators to meet certain operating standards. These authorities and requirements will be discussed in more detail in the following paragraphs.

	1976			1977			NINE MONTHS 1978		
	FUNDING		(3) MAN YEARS	FUNDING		(4) MAN YEARS	FUNDING		(4) MAN YEARS
	(1) FEDERAL	(2) NON FEDERAL		FEDERAL	(2) NON FEDERAL		(1) FEDERAL	(2) NON-FEDERAL	
A. OPERATIONS & MAINT.	$ 27,630.54	$ 139,391.46	7.0	74,106	$204,820	10	$ 44,163	$168,187	6
B. PERMITS	11,061.18	56,001.82	4.85	15,614	43,155	5	16,775	64,265	9
C. PLANNING	10,989.39	55,439.61	3.61	27,678	76,499	5	20,234	77,516	5
D. MONITORING	59,569.90	300,621.10	20.00	40,999	119,829	7	33,891	129,833	6
E. ENFORCEMENT	73,581.53	371,206.47	25.80	101,725	281,158	38.5	68,578	262,717	30.5
F. TRAINING	3,406.22	17,183.78	1.44	8,697	24,038	1.5	6,672	22,262	1.75
G. ADMINISTRATION	26,574.76	134,065.24	12.25	27,700	76,750	7	17,867	68,411	6
H. OTHER	2,166.48	10,929.52	.50	19,381	53,568	5	26,249	100,561	5.25
I. TOTAL PROGRAM ELEMENTS	$215,000.00	$1,084,639.00	79.75	315,900	$870,825	71	$233,819	$895,752	68.5

EXHIBIT III-3

Budget and Manpower Estimates
of Air Pollution Control Section
Houston Department of Health

EXHIBIT III-4
Estimation of DOH Air Pollution
Control Program Output Costs

	1976	1977	1978
Enforcement			
1. Total Dollars	444,787	382,881	441,726
2. Total Output—Complaints and NOVs	3,134	3,810	3,806
3. Dollars/Output—Complaints and NOVs	141	100	116
Permits			
1. Total Dollars	66,862	58,769	108,053
2. Total Output—Permits	111	140	129
3. Dollars/Output—Permits	602	419	837
Monitoring			
1. Total Dollars	360,210	150,927	391,409
2. Total Output—Source and Facility Investigations	1,660	4,941	4,016
3. Dollar/Output—Investigations	216	30	97

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1 At the client's request we have divided the outputs for enforcement, permits, and monitoring into the total dollar amount budgeted for each program as taken from the 1976, 1977, and 1978 Grant Applications. Because the activities and expenses which are classified as enforcement, permits, or monitoring, for purposes of the grant applications changed significantly from 1976 to 1978, these figures should not be used as a measure of cost effectiveness.

EXHIBIT III-5
Comparison of Federal and City Expenditures
For Air Pollution Control For the City of Houston[1]

Fiscal Yr.	Total Funds	Federal Funds	% Federal	Local Funds	% Local
7/67-12/68	375,954	247,197	65	128,757	35
1/69-12/69	364,769	243,179	66	121,590	34
1/70-12/70	455,906	287,916	63	167,990	37
1/71-12/71	481,966	253,272	52	228,694	48
1/72-12/72	571,610	253,272	44	318,338	56
1/73-12/73	669,230	253,000	37	416,230	63
1/74-12/74	740,520	253,000	34	487,520	66
1/75-12/75	921,957	215,000	23	706,957	77
1/76-12/76	1,049,245	253,000	24	796,245	76
1/77-12/77	1,207,220	315,000	26	892,220	74
*1/78-9/78	1,055,074	315,819	29	739,255	71

*Estimate for 9 months.

1 City of Houston Health Department Air Pollution Control Program

Although the Texas Clean Air Act establishes the Texas Air Control Board as the official air pollution control agency for the State of Texas, the Act provides for city governments in the state to conduct air pollution control programs within their jurisdiction, with limiting provisions intended to prevent the adoption of inconsistent standards by different government agencies. Except for these limiting provisions, the division of responsibility and authority between state and local governments is not specified. In order to establish a clear division of responsibility that would make the best use of state and local resources, a Letter of Agreement was executed on January 25, 1977 between the Texas Air Control Board and the Houston Department of Health in which the TACB delegated specific tasks and responsibilities to the Houston Department of Health. Under the Agreement, the Houston tasks and responsibilities are as follows:

- Responsibility for ambient air monitoring, compliance inspections and other surveillance, and enforcement on all sources within the city limits and the Ship Channel Industrial District[1]

- Responsibility to investigate all complaints within the city's jurisdiction and report to the state using the Source Information System (SIS)

- Responsibility for performing compliance inspections as required by the State Implementation Plan for sources within the city's jurisdiction

- Responsibility for determining and recommending to the TACB which sources meet the requirement of a major source

- Responsibility to provide assistance to the TACB in the administration of the upset and malfunction regulations (TACB General Rules 7, 8)

- Responsibility to investigate all applications for construction and operating permits involving sources in the region. Analysis and comments are to be sent to the TACB staff in Austin for a final decision.

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1 The Ship Channel Industrial District has been defined as the area 2500 feet on either side of the center of the Houston City Ship Channel

In addition to the responsibility for surveillance and enforcement delegated from the state, the Department of Health is also responsible for the enforcement of a municipal ordinance which applies to incinerators. Basically, this ordinance requires that all incinerators within the city limits are to be operated to complete the combustion of waste material. In order to operate, incinerators are required to have a permit issued by the Department which incorporates the ordinance requirements.

In some instances, jurisdictional overlap between state, city, and county programs may result in confusion on the part of sources. This happens in the Houston Ship Channel Industrial District when some emission points of sources are within the Ship Channel Industrial District and subject to the city jurisdiction, while other emission points are outside the Ship Channel Industrial District and subject to the State and County jurisdiction.

(5) Department of Health Record Keeping

The Department of Health uses several record keeping systems including the TACB computerized Source Investigation System (SIS) to provide information for each of the three air program elements; surveillance, enforcement, and permits. Exhibit III-6 displays the records used for each program element, the purpose of the records, and the type of information contained in each record. The DOH inputs surveillance, permits, and enforcement information into the SIS. On a monthly basis, and upon request, the SIS prints reports summarizing inspection activities, sampling results, compliance status and scheduled future actions. According to DOH staff, the information in each log and the SIS, is available to the public upon request. However, the DOH has received few requests for the information. Appendix D shows copies of each of the logs, the SIS input sheet, and a detailed summary of the reports capable of being generated by the SIS. DOG records keeping appears up to date, complete, and effective.

EXHIBIT III-6
DOH Record Keeping Summary

Program	Records	Purpose	Type of Information
Permits	Permits Log	Tracks construction and operating permits	. Plant type . Date permit issued . NSPS applicability
	Incinerator Construction Plan Log	Tracks incinerator permits	. Location . Burn rate . Waste . Manufacturer
	Incinerator Card File	Tracks incinerator permit issuance and renewal	. Date of permit issuance and renewal
	SIS System	Tracks operating and construction permits	. Inspection date . compliance status . Sampling data
Surveillance	Complaint Log	Tracks resolution of citizen complaints	. Source of complaint . Type of complaint . Time and date of complaint . What action taken
	Upset Log	Tracks source upset conditions	. Nature and level of emissions . Control device affected . Date and time of notification . Expected duration
	Inspection Log	Tracks SIP inspection schedule	. Company . Date of inspection . Engineer and supervisor assigned to inspection
	SIS System	Tracks investigations, sampling, complaints, and upsets	. Inspection date . Sampling date . Complaint status . Upset violations
Enforcement	Legal Case Referral Log	Tracks case enforcement process	. Date of DOH case review . Date of referral to city legal department . Date of referral to county District Attorney . Disposition of case
	Active Company File	Provides list of files in master company file	. Complaints . Surveillance reports . Legal actions . Stack testing . Notices of violation
	SIS System	Tracks compliance status of all sources	. Date of investigation . Date of notice of violation . Compliance status . Date of next action

IV. PRECOMPLIANCE AND POSTCOMPLIANCE PROGRAMS

This chapter provides a detailed description of the major programs administered by the City of Houston Department of Health which are designed to regulate air pollutants from stationary sources. The regulatory process can be defined in terms of four phases:

- Pre-permitting
- Permit preparation
- Construction
- Continuing compliance.

For analytical purposes, the first three phases are described together as precompliance programs and the fourth phase is described as postcompliance programs.

The intent of this study is to focus on the Houston local program, integrating state programs only where necessary to describe fully the regulatory requirements imposed on sources within the Houston city limits. The first section of this chapter on precompliance programs describes the regulatory development, permit preparation, and surveillance programs at the state level primarily to provide the historical perspective necessary to understand fully the postcompliance programs. The second section on postcompliance programs describes the permits, surveillance, and enforcement programs currently being administered at the local level.

1. PRECOMPLIANCE PROGRAMS

This section describes the development of Texas regulations before and after the preparation of the State Implementation Plan. In addition, the permit and surveillance programs are discussed.

(1) Regulatory Development

During the period immediately prior to the development of the State Implementation Plan in 1971, Texas established ambient standards and developed regulations to meet those standards for particulate matter and sulfur oxides. These ambient standards were more stringent than the National Ambient Air Quality Standards (NAAQS) later established. The Texas regulations were developed to meet the ambient standard measured at ground level in several ways. First, a net upwind and downwind ambient standard measured at the property line was established. Second, emission limitations were set for stacks based on the theoretical calculation that dispersion characteristics of the stack (height, temperature, and velocity) would yield a maximum ground level concentration equal to the ambient standard.

The property line ambient standard for sulfur oxide the Houston area was set at 75% of the state-wide standard. This property line was more stringent in Houston because it was thought at the time that the density of sources in Houston indicated that a sulfur oxide problem could exist in the area. Later it was discovered that sulfur oxide was not a significant problem because of the large number of facilities in Houston that are gas-fired. During the period from 1968 to 1971, regulations were added for opacity, florides, and agricultural processes.

In 1971 Texas developed a plan for attaining and maintaining the National Ambient Air Quality Standards in accordance with Section 110 of the Clean Air Act of 1970. As part of the state implementation plan, an emissions inventory was developed, new regulations were written, and Houston was chosen as an example region to test the effectiveness of the new regulations in meeting the NAAQS. This process is described in more detail in the following paragraphs.

The emissions inventory, the estimate of total statewide pollutant emissions, was originally constructed by notifying sources listed in the Texas manufacturers guide. Each source was to list the quantity emissions from each emission point.

During those early years sources were asked to give their best estimates of the emissions, submitting stack test data if available. However, only the large companies supplied stack test data, and most of the emissions estimates were based on emissions factors i.e., calculated emission rates based on process parameters. As new emission inventories were developed by Texas in 1967, 1968, 1969, 1970, 1972, and 1975, the data became increasingly accurate for several reasons. First, sources began to realize that major policy decisions were made based on the data submitted. Second, the TACB would not issue a permit for a new source within a facility unless the emissions inventory for existing sources within that facility was complete and accurate.

At the same time the emission inventory was established, new regulations were written to attain and maintain the NAAQS. For both particulate matter and sulfur oxides the former strategy of tying the emission limitations to a ground level concentration by a theoretical model was abandoned. Instead, estimates of emission limitations were based on an industry by industry analysis of what emission levels could be achieved with the control equipment known at that time. Emission limitations based on industry type and size were established forming the basis for the Texas flow rate emission limits in effect today. Because Texas did not want to get totally away from the concept of ground level concentration, the upwind downwind ambient property line regulations were kept. Also, the first hydrocarbon regulations were written based on the EPA criteria documents and the California regulations.

After the regulations were written for the criteria pollutants, an analysis was done to determine whether the regulations were stringent enough to attain and maintain the NAAQS. This analysis was done by using Houston as an example region because of the high density of larger sources in Houston. It was thought that if the regulations were effective in reducing emissions to the appropriate levels in Houston, they would also be effective statewide where the sources were smaller and not as densely located. The TACB thus modelled the Houston area and predicted pollution concentrations for particulate matter and sulfur oxide using the new regulations. In both cases, the NAAQS were met.

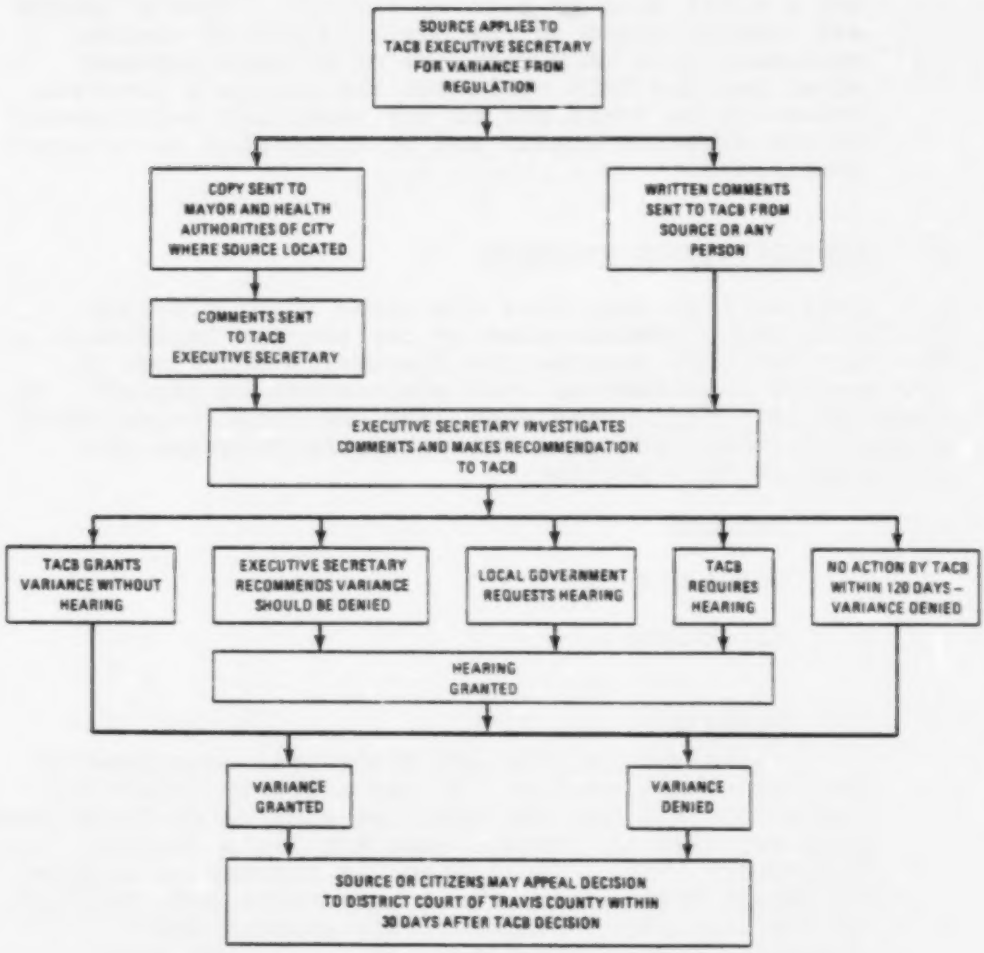
Several methods were used to inform sources of the new regulatory requirements. Notice was provided through public hearings, newspapers, and major industrial associations within the state. Also, in recent years all new regulatory requirements have been published in the Texas Register.

(2) Permit Preparation and Surveillance

Texas used the variance procedures mandated by the Texas Clean Air Act as the permit mechanism for sources not in compliance with the regulations. Typically, a source unable to comply with the regulations would petition the TACB for a variance. Once issued, the variance would include a compliance schedule containing the dates that the source would contract, build, and complete construction of the appropriate control equipment. The TACB would then perform a stack test to verify final compliance. To determine how much time was necessary to install the control equipment, the TACB relied on the input from the source as well as its own engineering evaluation. During the early 1970's, the TACB processed between 75 and 100 variances per month.

The flow chart on Exhibit IV-1 describes the variance process as outlined by the Texas Clean Air Act. First, a source which could not comply with the TACB regulations applied to the TACB Executive Secretary for a variance. A copy of the variance application was sent to the mayor and health authorities of the city where the source was located. Comments were received from local authorities, citizens' groups,and any other person interested in the variance disposition. The Executive Secretary of the TACB would investigate the comments and make a recommendation to the TACB. The TACB could grant the variance without a hearing or take no action for 120 days which would serve as a variance denial. Before granting or denying the variance, a public hearing could be requested by the Executive Secretary, local authorities, or the TACB itself. During the public hearing, several issues would be addressed in addition to issuance or denial of the variance itself. These included the duration of the variance, the extent of emissions, the extent of emission abatement, and the source reporting requirements. Within 30 days after the TACB made a final decision, an affected party could appeal the decision to the District County Court and contend that the TACB action was arbitrary or unreasonable.

EXHIBIT IV-1
Texas Variance Process


SOURCE APPLIES TO TACB EXECUTIVE SECRETARY FOR VARIANCE FROM REGULATION
COPY SENT TO MAYOR AND HEALTH AUTHORITIES OF CITY WHERE SOURCE LOCATED
WRITTEN COMMENTS SENT TO TACB FROM SOURCE OR ANY PERSON
COMMENTS SENT TO TACB EXECUTIVE SECRETARY
EXECUTIVE SECRETARY INVESTIGATES COMMENTS AND MAKES RECOMMENDATION TO TACB
TACB GRANTS VARIANCE WITHOUT HEARING
EXECUTIVE SECRETARY RECOMMENDS VARIANCE SHOULD BE DENIED
LOCAL GOVERNMENT REQUESTS HEARING
TACB REQUIRES HEARING
NO ACTION BY TACB WITHIN 120 DAYS – VARIANCE DENIED
HEARING GRANTED
VARIANCE GRANTED
VARIANCE DENIED
SOURCE OR CITIZENS MAY APPEAL DECISION TO DISTRICT COURT OF TRAVIS COUNTY WITHIN 30 DAYS AFTER TACB DECISION

During this period, the major effort of the TACB was directed toward requiring major sources to install control equipment through the variance process. Where a source refused to install control equipment, the TACB would refer the case to the Attorney General's Office to file a civil action against the source. In many cases, the result of this litigation was a court imposed compliance schedule for the installation of control equipment and a civil fine as high as $20,000. Once a source was legally bound to the installation of control equipment by a TACB variance or a court imposed schedule, the TACB monitored the source's progress primarily by oversight of the reporting requirements in the schedule itself and by responding to citizens' complaints.

2. POSTCOMPLIANCE PROGRAMS

This section describes the three major programs currently being administered by the Houston Department of Health. For each program the discussion describes the substantive requirements, the administrative process, the types of information reviewed, and the interaction among state and local offices. The following programs are described in this section:

- Permits
- Surveillance
- Enforcement.

(1) Permits

Texas substantive and procedural requirements imposed on new sources are particularly intensive. Since 1972 all new and modified sources in Texas have been required to install Best Available Control Technology. This requirement is imposed on sources by permit both during the construction and operation of the facility. Insignificant sources are exempted from the permit process. In addition, incinerators within the city of Houston must be permitted in order to comply with a city ordinance. The matrix in Exhibit IV-2 describes the requirements and the review process of the four elements of the permit programs:

TYPE OF PERMIT	APPLICATION	REQUIREMENTS	EVALUATION PROCEDURE	NUMBER OF HOUSTON AGENCY ACTIONS FROM JULY 77 - JUNE 78	ROLES OF STATE AND CITY
CONSTRUCTION PERMIT	NEW AND MODIFIED SOURCES	• BEST AVAILABLE CONTROL TECHNOLOGY SINCE 1972 • EMISSION LIMITS • MONITORING REQUIREMENTS	• PROCESS AND CONTROL DATA ESTIMATES • EVALUATION OF POTENTIAL LOCATION FOR NUISANCE • INSPECTIONS	• 88 PROCESSED	• JOINT INSPECTION • HOUSTON SUBMITS COMMENTS • DECISION IS STATE RESPONSIBILITY • STATE TRACKS PROGRESS
OPERATING PERMIT	NEW/MODIFIED SOURCES MUST APPLY WITHIN 60 DAYS AFTER OPERATION	• CONSTRUCTION PERMIT CONDITIONS • NSPS • NESHAPS	• INSPECTIONS • STACK TEST • PROPERTY LINE SAMPLE • OPACITY TEST	• 37 PROCESSED 8 HELD OR DISAPPROVED	• SAME AS CONSTRUCTION PERMIT
PERMIT EXEMPTION	SOURCES OF INSIGNIFICANT EMISSIONS	• TACB LIST OF 90 CATEGORIES OF INSIGNIFICANT EMISSIONS • CASE BY CASE DETERMINATION	• INVESTIGATION TO REVIEW SOURCE DATA ON EMISSIONS	• 12 PROCESSED	• SAME AS CONSTRUCTION PERMIT
INCINERATOR PERMITS	INCINERATORS WITHIN HOUSTON	• MUST BE OPERATED TO COMPLETE COMBUSTION OF WASTE MATERIAL • CITY ORDINANCE	• BURN RATE • TYPE OF WASTE BURNED • CLASSIFICATION OF INCINERATOR	• 379 PROCESSED • 100 DISAPPROVED	• HOUSTON HAS SOLE RESPONSIBILITY • STATE DOES NOT PARTICIPATE

EXHIBIT IV-2
Permit Program Requirements

- Construction permits
- Operating permits
- Permit exemption
- Incinerator permits.

In addition, Exhibit IV-3 displays the number of permits processed by DOH from 1974-1978.

1. Construction Permits

Any person who plans to construct a new facility or engage in the modification of an existing facility must submit an application to the TACB for a construction permit. The flow chart in Exhibit IV-4 shows the steps involved in the construction application evaluation. The application requests general information as well as detailed engineering data concerning specific processes and control devices. This data includes:

- Location of the units
- Operating schedule
- Unit classification (new or used)
- Complete process description
- List of emission sources including flow rates, stack heights, temperature and velocity
- Characteristics of input (fuel, waste material)
- Characteristics of output (flue gas)
- Control equipment (type, efficiency, and drawings).

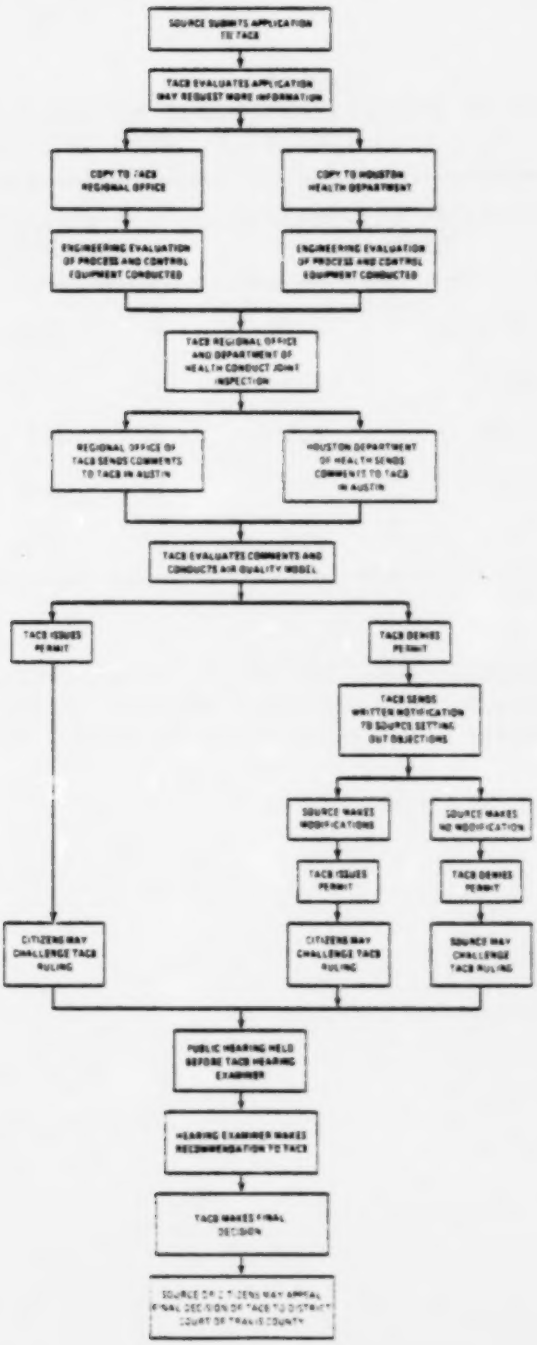
The TACB permits engineer will usually review this information for about two weeks and, if it is complete, send a copy of the application to the City of Houston Health Department and the TACB regional office in Houston. If the application is incomplete, additional information is requested from the source. Both

EXHIBIT IV-3
Number of Permits Processed by the Houston
Air Pollution Control Program 1974-1978

Construction and Operating Permits		Incinerator Permits
1974	105[1]	412
1975	102	438
1976	111	415
1977	140	394
1978	129	378

1 Estimated number of permits processed based on conversation with Virgil Lehmberg, Chief, Permits Section, Houston Air Pollution Control Program.

EXHIBIT IV-4
Texas Permit Process


SOURCE SUBMITS APPLICATION TO TACB
TACB EVALUATES APPLICATION MAY REQUEST MORE INFORMATION
COPY TO TACB REGIONAL OFFICE
COPY TO HOUSTON HEALTH DEPARTMENT
ENGINEERING EVALUATION OF PROCESS AND CONTROL EQUIPMENT CONDUCTED
ENGINEERING EVALUATION OF PROCESS AND CONTROL EQUIPMENT CONDUCTED
TACB REGIONAL OFFICE AND DEPARTMENT OF HEALTH CONDUCT JOINT INSPECTION
REGIONAL OFFICE OF TACB SENDS COMMENTS TO TACB IN AUSTIN
HOUSTON DEPARTMENT OF HEALTH SENDS COMMENTS TO TACB IN AUSTIN
TACB EVALUATES COMMENTS AND CONDUCTS AIR QUALITY MODEL
TACB ISSUES PERMIT
TACB DENIES PERMIT
TACB SENDS WRITTEN NOTIFICATION TO SOURCE SETTING OUT OBJECTIONS
SOURCE MAKES MODIFICATIONS
SOURCE MAKES NO MODIFICATION
TACB ISSUES PERMIT
TACB DENIES PERMIT
CITIZENS MAY CHALLENGE TACB RULING
CITIZENS MAY CHALLENGE TACB RULING
SOURCE MAY CHALLENGE TACB RULING
PUBLIC HEARING HELD BEFORE TACB HEARING EXAMINER
HEARING EXAMINER MAKES RECOMMENDATION TO TACB
TACB MAKES FINAL DECISION
SOURCE OR CITIZENS MAY APPEAL FINAL DECISION OF TACB TO DISTRICT COURT OF TRAVIS COUNTY

Reproduced from best available copy.

the city of Houston and the TACB regional office do an engineering evaluation of the process and the control equipment which is proposed. A joint inspection is then conducted. The purpose of the inspection is to verify the information submitted by the source, and to determine whether the proposed location may constitute a nuisance. The fact that an industrial process may locate in close proximity to a residential area is a possibility because Houston has no zoning laws to regulate land use.

The recommendations from the inspections are then sent to Austin for evaluation. The TACB office in Austin can run a computer model of the emissions to determine whether the proposed emission limits are consistent with NAAQS. If the proposed emission limits are consistent with the NAAQS, the permits engineer recommends permit approval to the Director of the Permits and Source Evaluations Section, who in turn recommends approval to the Director of Control and Prevention section. The Director of Control and Prevention then recommends approval to the Director of the TACB.

The construction permit is then issued by the TACB along with the general and specific conditions for construction and operation. These conditions may include:

- Required notification prior to start-up so the TACB may be present
- Required monitoring information
- Special equipment such as hoods and ducts to collect fugitive emissions
- Permit renewal in one year.

If the permit is denied, the TACB notifies the source in writing explaining the objections. If the source makes the required modifications, the permit is then issued.

The decision to issue or deny the construction permit can be challenged by a citizen's group or the source. If this happens, a formal hearing takes place before a hearing examiner of the TACB. The hearing examiner recommends a course of action to the TACB and the TACB then makes a final decision.

During the period from July 1, 1977 to June 30, 1978, the City of Houston Department of Health processed 80 construction permit applications. In defining the divisions of responsibilities between the state and local program, it should be noted that the construction and operating permit process is a state responsibility with the Department of Health assisting in the joint inspection and in providing comments. After the permit is issued, the state tracks the sources progress toward compliance through its computerized source investigation system (SIS). This system will be described in more detail later in this chapter.

2. Operating Permits

The Texas Clean Air Act requires that within 60 days of operation, a new or modified source must apply to the TACB for an operating permit. The steps involved in the process are similar to the construction permit with the review focusing upon operation. During the joint inspection performed by the regional TACB office and the Houston agency, the following data are examined:

- Stack test information
- Property line samples
- Opacity tests
- Process parameters.

Comments from the TACB regional office and the Houston Department of Health are sent to the TACB headquarters in Austin. The above information is analyzed to determine compliance with:

- Construction permit conditions
- New source performance standards, if applicable
- TACB regulations.

The permit issuance and appeals process is the same as the construction permit.

Under the TACB regulations tnere is no prescribed time period within which the TACB must issue an operating permit. In some cases, this procedure has gone on for several years with the source making adjustments to the process or the control equipment prior to the permit issuance. However, when viewed against the total number of permits which are processed, the number of such long delays is small.

During one year period ending in June 1978, the Houston Health Department processed 37 operating permits and recommended for disapproval or "held" eight. As with the construction permits, once the permits are issued, the state tracks the source's progress toward compliance using the SIS system.

3. Exemptions

Section 3.27 of the Texas Clean Air Act provides that the TACB may exempt certain sources from the permit process if the source's emissions are insignificant. The TACB has issued a list of 93 categories of sources which fall into this area. Examples include:

- Equipment for use at domestic residence for domestic use
- Small incinerators emitting less than 100 pounds/hour
- Equipment used exclusively for steam cleaning and dry cleaning.

When a request for exemption is evaluated by the regional office of the TACB, an attempt is made to see if the source falls within one of the categories exempted previously. If not, each source is evaluated on a case-by-case basis. The regional office may inspect the source to verify the information received. The city of Houston may join the inspection and submit comments. The TACB makes the final determination.

During the year period ending June 1978, the city of Houston submitted comments on 12 exemptions.

4. Municipal Incinerators

By city ordinance, all incinerators within the city limits must receive an operating permit. The primary requirement of the permit is that the incinerator must be operated in such a manner so as to complete the combustion of waste material. The type of data required from the source on the permit application and inspection includes burn rate, type of waste material, and the classification of the incinerator.

During the year period ending June 1978, the city processed 379 permits. One hundred were disapproved. The state does not participate in this program.

(2) Surveillance Program

The surveillance program is made up of four elements:

- General Surveillance
- Annual SIP Inspection
- Complaint Investigation
- Self-Reporting for Upsets and Maintenance.

The discussion of each of these elements will describe the process, the type of data reviewed, and the role of the state and city offices. In addition, the numbers of each activity on a yearly basis will be provided.

1. General Surveillance

The City of Houston Health Department has divided the city into four areas for purposes of surveillance and enforcement. Major sources are observed on a daily basis by automobile, boat, and helicopter. This constant surveillance is especially effective in locating gross violations of visible emissions and odor.

Also, sources become aware that the city is performing surveillance on a routine basis and city inspectors become very familiar with the companies and processes within their particular district.

When the city is aware of a problem, a source is given special scrutiny which is termed legal surveillance. Legal surveillance may be used in the following instances:

- To provide additional evidence of violation for a possible case report
- Before, during, and after scheduled maintenance
- To verify that a source is taking the proper abatement measures promised during informal conferences
- To verify that a source is not constructing a new facility without the required construction or operating permit
- To monitor sources which may use toxic materials.

During legal surveillance, the inspector may take property line samples and review any sampling data which the source is required to take. If possible, pictures are taken of the violation. This process establishes a record of violations for later negotiation or legal action.

Exhibit IV-5 provides a summary of the surveillance activity for 1975, 1976, and 1977. As the exhibit indicates, source and facility investigations have increased dramatically while most of the other categories have remained stable.

In terms of personal qualifications, each inspector is required to complete college, and in many instances inspectors have several years of experience in those industries most prevalent in their district. Also, each inspector spends a one-month training period in each district.

EXHIBIT IV-5
Summary of Surveillance Activities

ACTIVITIES	1975	1976	1977
SOURCE & FACILITIES INVESTIGATIONS (SIS)	1,860	1,660	4,941
COMPLAINTS INVESTIGATED	1,925	2,005	1,996
HIGH VOLUME SAMPLES ANALYZED	214	154	174
GAS SAMPLES ANALYZED	54	56	49
OTHER SAMPLES			14
PLUME OBSERVATIONS OF STATIONARY SOURCES	53	8	56
ODOR EVALUATIONS	95	187	300
HELICOPTER OBSERVATIONS	661	507	534
INCINERATOR PERMITS REVOKED		9	3
COMPLAINTS RESULTING IN NOV	160	143	222

2. Annual SIP Inspections

As required by the State Implementation Plan, major sources are inspected on an annual basis to determine compliance. There are 88 major sources (100 ton potential emissions) within the jurisdiction of the Houston Department of Health. In addition, those sources with potential emissions of 25 100 tons per year located in nonattainment areas (about 25 sources) are inspected annually. Other sources with potential emissions of 25 100 tons per year (350 sources) are inspected biannually.

During this announced inspection, the following types of data are examined:

- The emission inventory is studied and inspected
- Compliance with outstanding permit conditions is determined
- The production process is studied
- The type and condition of the control equipment is noted.

The source is asked whether the plant is in compliance with the air pollution requlations and the basis which was used by the company to make that determination.

To verify compliance, sampling data is analyzed. The most recent stack test information is examined and the current process parameters are checked against those taken at the time of the test. About 20 percent of the major sources in the Houston area are required to do in-stack monitoring. If this data is available, it is also reviewed. About 30 percent of the major sources in the Houston area also take property line ambient samples for their own use. This data is also reviewed. If a violation is determined, the city will usually not issue a notice of violation based upon the source's information. Rather, an opacity test is conducted and the TACB regional office may be

requested to perform a stack test because the city has no stack testing capability of its own. The TACB analyzes the stack test data and reports back to the City of Houston Department of Health. The Department of Health will then issue a notice of violation if the source is not in compliance.

The city of Houston was delegated this responsibility for verification of source compliance about 3 years ago. During the year ending on June 30, 1978, 95 SIP inspections were made on major sources, and 53 were made on minor sources. The numbers are greater than the number of major and minor sources because some sources were investigated twice during the period.

The total number of inspections made by the Department of Health from 1970-1974 is presented as Exhibit IV-6.

3. Complaints

Because surveillance is done by car, boat, and helicopter on a 24 hour basis, the city can respond to a complaint anywhere in Houston within 15 minutes. Typically, complaints are received by telephone or referred from another city office. When a complaint is received, an investigator is sent to the area to confirm the source of the complaint. Usually the investigator is able to track the source of the violation to a particular company. A notice of violation is then issued and the source is requested to take action to abate the problem. The sources may be listed for increased surveillance for several weeks after the complaint to insure that the problem has been abated.

During the year ending in June of 1978, 61 percent of the complaints were related to odor, 19 percent to dust, 14 percent to smoke, and 6 percent to other categories. The state tracks the progress in resolving the complaints.

EXHIBIT IV-6
Number of Inspections by
the Houston Department of Health
1970 - 1974

1970	-	634
1971	-	1533
1972	-	804
1973	-	1147
1974	-	1245

4. Self Reporting

Under TACB Rules 7 and 8, a source must notify the TACB as soon as possible after an upset, which is defined as excessive emissions which may contravene TACB regulations. A source must also notify the TACB 10 days prior to any planned maintenance or as soon as practicable. If the TACB determines that any violation caused by the upset or maintenance was beyond the control of the source, an exemption is issued to the source pursuant to TACB Rule 12. In some cases a joint inspection of the facility is done by both the TACB and the Houston Department of Health. An effort is made during this inspection to plan actions which will minimize emissions during the maintenance period, such as shortening the time period during which the control equipment will be down. Houston personnel estimate that 95 percent of these actions taken are voluntary on the part of the sources. During investigations for upsets, efforts are made by state and city personnel to determine whether the upset cause could have reasonably been prevented by the company. In the opinion of City personnel, in most cases, the upsets relate to process problems which are unavoidable. A small number of cases are caused by employee error.

During the six-month period ending June 30, 1978, the city of Houston was notified 664 times pursuant to TACB Rules 7 and 8. At the present time it is difficult to spot trends of reported upset and maintenance violations into the state's computerized system currently used for surveillance and enforcement. For each significant air pollution source, this computer system stores permanent, investigative, sampling, complaint, and administrative information. Approximately 20,000 input documents per year are processed and 350 output reports per year are processed.

(3) Enforcement

The City of Houston enforcement program is heavily oriented toward the administrative processing of local complaints. This section discusses the type of complaints and violations for which notices of violation are issued and the administrative process used to handle a problem source from the issuance of a notice of violation to litigation.

The primary enforcement action used by the Department of Health is the issuance of notices of violations. In the Summary of Enforcement Activities shown in Exhibit IV-7, the notices of violation (NOV) are categorized by violation for 1975, 1976, and 1977. The Houston Department of Health uses a literal interpretation of the regulations as the criteria for determining whether or not an NOV should be issued. Each source must attain and maintain compliance with all state and local regulations with exemptions given only where provided by statute. Exemptions by statute include TACB Regulation 131.03.03 which allows a five minute exemption from the opacity standard for maintenance related activities such as soot blowing, equipment changes, and ash removal. Also, TACB Regulation 131.01.12 provides an exemption from regulations during an upset if after notification, a determination is made by the TACB that the upset conditions were unavoidable and that corrective measures were taken as soon as possible. Therefore, in cases where a source exceeds a standard even by a small amount of emissions for a short time period, an NOV is issued by the DOH unless the source is eligible under statute for an exemption.

After a NOV is issued, few additional administrative actions are taken by the DOH in most cases. The DOH issues about 97.5 percent of the notices of violation for problems which are not measurable such as nuisance, outdoor burning, and excessive visible emissions. Most of these problems are corrected after an initial contact and the issuance of an NOV from the DOH. Notices of violation issued based on opacity, stack tests, or property line tests which can be documented in court averages about 2.5 percent of the total. In these cases DOH is flexible after the issuance of a NOV in determining the extent of future administrative action. For example, in cases where only a slight violation is detected, DOH monitors the source but may take no further administrative action. With more

EXHIBIT IV-7
Summary of Enforcement Activity

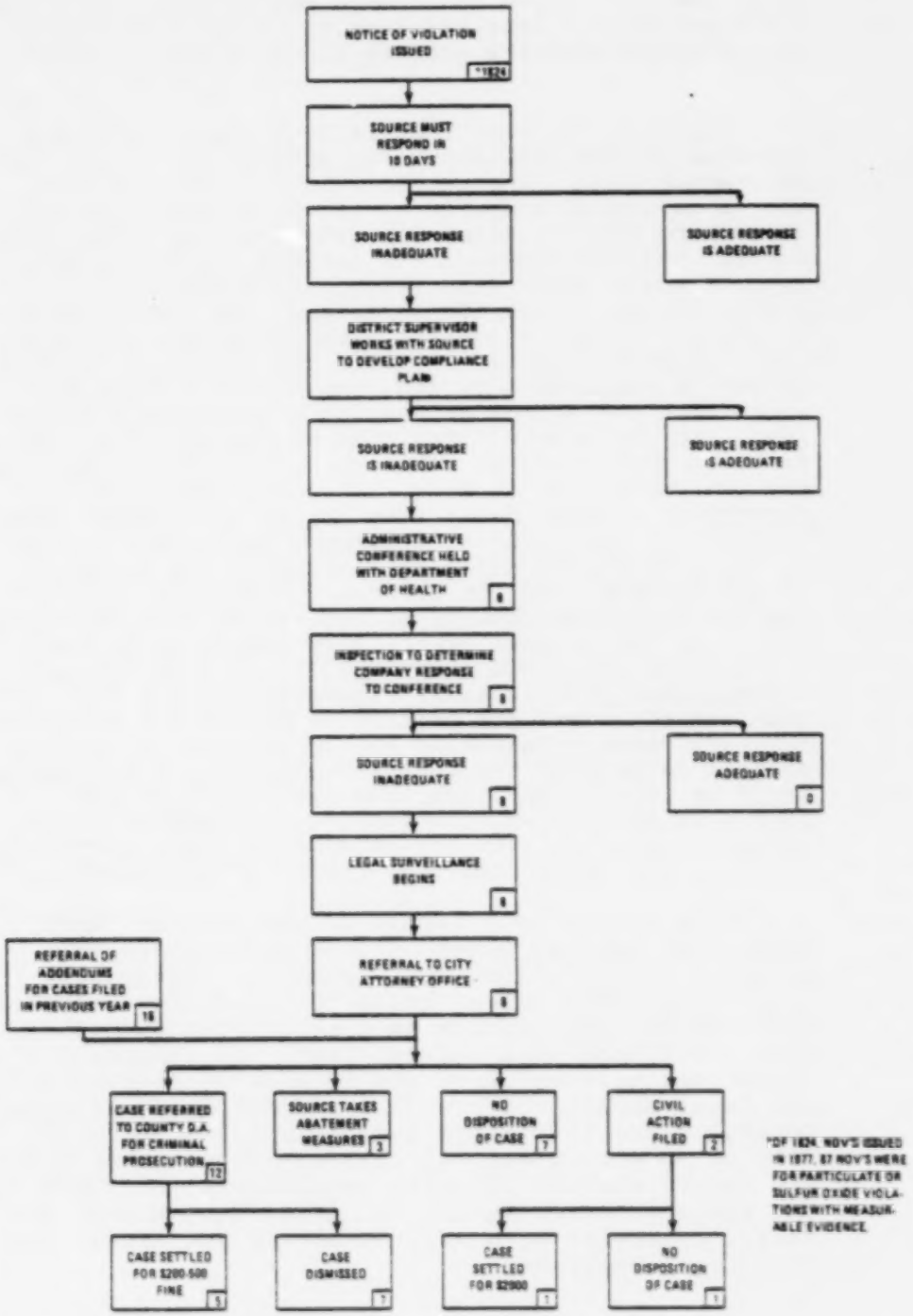
	Notices of Violations Issued		
	1975	1976	1977
GENERAL RULES			
NUISANCES (RULE 5)	160	143	222
TRAFFIC HAZARD (RULE 6)	1	3	7
UPSET NOTIFICATION (RULE 7)	13	25	51
MAINTENANCE NOTIFICATION (RULE 8)			7
OUTDOOR BURNING (RULE 101.1)	351	206	
VISIBLE EMISSION			
OPACITY (RULE 103.1)	23	3	43
FLARE (RULE 103.2)	12	3	48
FUGITIVE (RULE 103.3)	127	108	163
TRUCKS, CARS, TRAINS, SHIPS (RULE 103.4 & 103.5)	314	223	381
PARTICULATE MATTER (MATERIALS HANDLING, CONSTRUCTION, ROADS) (RULE 104)	124	101	213
PARTICULATES (PROPERTY SAMPLES) (RULE 105)	38	33	39
GASES (SO_2) (PROPERTY SAMPLES) (RULE 201.07)		3	5
VOLATILE CARBON COMPOUNDS (REG. V)			1
FAILURE TO OBTAIN A CONSTRUCTION OR OPERATING PERMIT (RULE 601)	6		23
LOCAL ORDINANCES (72-1915)	224	159	144
OTHER VIOLATIONS (4477-5B 4.01)	16	119	232
TOTAL NUMBER OF NOTICES	1,429	1,129	1,824
CITATIONS ISSUES	9	2	1

severe problems, additional administrative actions such as an administrative conference may be required. Appendix F provides a detailed listing of the time frames of DOH administrative actions for five sample cases.

The flow chart on Exhibit IV-8 shows the steps involved in the administrative process using 1977 as an example year. When a violation is detected the source is issued a notice of violation and a letter explaining the violation. As shown on the flow chart, during 1977 there were 1,824 notices of violation. Most of these NOV's were issued for smoke and odor problems. After the NOV is issued, the source is requested to submit a control plan to correct the problem. If this plan is adequate, the source is tracked to verify progress. If not, the district supervisor works with the source to develop an acceptable control plan. If the source's response to meeting with the district supervisor is still unacceptable, an administrative conference is held. The administrative conference is a significant step in the enforcement process because for the first time company management and Department of Health officials including the Director of Enforcement, and the Chief and Assistant Chief of the Air Pollution Control office become involved in the case. As can be seen by the flow chart, eight such conferences were held during 1977. At a conference, a compliance plan is again requested and the city office examines contracts for control equipment and pertinent delivery dates. Following the conference, a written summary is made of the source's abatement commitments. If if is felt at any time that the source is not acting in good faith, the source is placed on legal surveillance, if it is not already on legal surveillance, where additional violations are documented.

Once a case is referred to the Houston Legal Department several other offices may also become involved in the enforcement process. The Houston Legal Department refers cases to the County District Attorney for prosecution as a criminal misdemeanor when violations have not recurred. If recurring violations have occurred and if a civil case is filed, the legal section of the TACB and the State Attorney General share litigation responsibilities with the City of Houston Legal Department. When a case involves the interpretation of state regulations, the TACB and the State Attorney General's Office take a more active role. Otherwise both offices advise and assist the City Legal Department.

EXHIBIT IV-8
Flow Chart of Enforcement Process Showing Number of Enforcement Cases Processed in 1977


NOTICE OF VIOLATION ISSUED *1824
SOURCE MUST RESPOND IN 10 DAYS
SOURCE RESPONSE INADEQUATE
SOURCE RESPONSE IS ADEQUATE
DISTRICT SUPERVISOR WORKS WITH SOURCE TO DEVELOP COMPLIANCE PLAN
SOURCE RESPONSE IS INADEQUATE
SOURCE RESPONSE IS ADEQUATE
ADMINISTRATIVE CONFERENCE HELD WITH DEPARTMENT OF HEALTH 0
INSPECTION TO DETERMINE COMPANY RESPONSE TO CONFERENCE 0
SOURCE RESPONSE INADEQUATE 0
SOURCE RESPONSE ADEQUATE 0
LEGAL SURVEILLANCE BEGINS 0
REFERRAL OF ADDENDUMS FOR CASES FILED IN PREVIOUS YEAR 18
REFERRAL TO CITY ATTORNEY OFFICE 0
CASE REFERRED TO COUNTY D.A. FOR CRIMINAL PROSECUTION 12
SOURCE TAKES ABATEMENT MEASURES 3
NO DISPOSITION OF CASE 7
CIVIL ACTION FILED 2
CASE SETTLED FOR $200-500 FINE 5
CASE DISMISSED 7
CASE SETTLED FOR $2900 1
NO DISPOSITION OF CASE 1

*OF 1824 NOV'S ISSUED IN 1977, 87 NOV'S WERE FOR PARTICULATE OR SULFUR DIXIDE VIOLATIONS WITH MEASURABLE EVIDENCE.

In 1977, all 8 of the sources for which an enforcement conference was held were referred for litigation to the Houston Legal Department. Also 16 case amendments from prior cases were referred to the City Legal Department as updates of evidence. Of the 24 cases referred to the Houston Legal Department in 1977, 12 were referred to the County District Attorney resulting in 5 fines under $500 and 7 court dismissals. Of the remaining 12 cases held by the City Legal Department, 3 cases were not filed because the City Legal Department negotiated directly with the source to arrive at an acceptable control plan. In 2 cases a civil action was filed, resulting in one out of court settlement for $2000 and another case still in litigation. Seven of the 12 cases were held indefinitely by the City Legal Department. Appendix G shows the cases, their disposition, and sanctions levied for all cases from 1975-1978.

Sometimes the City Legal Department may hold a case for several years without taking any legal action. There were several reasons given for this delay. First, other cases pending in the Houston Legal Department may require a more urgent priority because the City Legal Department is responsible for several other legal areas in addition to air pollution cases. Also, the City Legal Department suffers from a shortage of manpower and a high turnover resulting in the office maintaining only a few attorneys experienced in litigating air pollution cases. Thus, it takes additional time for new attorneys to become familiar with air pollution litigation. Second, many of the notices of violation relate to the nuisance portion of the TACB rules on the prohibition against "excessive emissions." Both of these violations are difficult to prove in court because of their subjective nature. In some instances, the case is held while stack test, opacity, or property line samples are received for further document the violation. Other times, however, cases are held for no apparent reason and little or no communication is made with the Houston Department of Health.

V. PRELIMINARY EVALUATION

The ultimate objective of this project is to evaluate the effectiveness of air pollution regulation in Houston, Texas. The evaluation focuses on the regulatory program of the city's Health Department but also considers related programs of the Texas Air Control Board (TACB). This chapter presents our preliminary evaluation of the Houston agency's principal strengths and potential problems. A final evaluation of the regulatory program must await an analysis of the performance of specific pollution sources in maintaining compliance. The final report of this project will contain a refinement of this preliminary evaluation, an overall assessment of agency effectiveness, and recommendations for program adjustments and alternatives to direct regulation.

1. SIGNIFICANT STRENGTHS

This section contains our preliminary findings on the strengths of the city of Houston air pollution program. These strengths contain both state and local elements in the following areas:

- The regulatory requirements imposed upon both new and existing sources
- Surveillance - Visible pollutants
- Agency leadership
- Intergovernmental relations
- Training.

(1) The Stringent Regulatory Requirements for New Sources and the Many Types and Variety of Regulations for Exiting Sources Have Effectively Controlled Source Emissions in the Houston Area

Air pollution control in Houston has benefitted from the early establishment of stringent requirements for new sources by the TACB. In addition, because Texas has many different types of regulations applying to

existing sources, the city has a variety of different surveillance and enforcement options to choose from in implementing its control program.

Using the permit process, Texas has required Best Available Control Technology (BACT) on all new and modified facilities since 1972. This requirement is especially significant in Houston because of the rapid growth of industry over the last five years. Also, emission limitations have been added as a requirement in the last year. An emission limitation is important because even with the installation of proper control equipment, an enforceable limitation places the risk of equipment effectiveness or malfunction with the source.

The types and variety of regulations which are used by Texas to regulate existing sources are particularly diverse. In regulating particulate matter, for example, emission limitations, opacity, equipment standards, process weight, work practice procedures, and ambient property line regulations are all used. Such diversity in the different kinds of regulations allows the city several alternatives in monitoring, surveillance, and enforcement. For example, the ambient property line regulation has proved successful in dealing with the problem of fugitive particulate matter and sulfur oxides. A violation of this regulation occurs when the net result of subtracting the downwind from the upwind ambient concentration measured at the property line exceeds the one-hour, three-hour, or five-hour standard. Enforcement is made easier because emissions do not need to be traced to a particular stack or point on the property to prove a violation. Also, the property line ambient sampling equipment is much easier and cheaper to use than stack test devices.

Despite the advantages of the ambient property line regulation, sometimes local conditions and source circumvention limit its use. For example, when a source is bordered by roadways or several other sources, it is difficult to trace ambient sampling to a particular facility. Also, wind variations make both three and five hour sampling difficult to use. A source may also render the property line regulation ineffective by either building a tall stack which causes the plume to go above the property line monitor or by leasing additional property. When problems occur which prevent the use of the property line regulation, other standards such as opacity and flow rate emission limitations are used to limit source emissions.

(2) The Surveillance Program in Houston Relating to Visible Emissions Appears Very Effective

The city agency is especially effective in the detection of visible emissions and complaint investigation due to the subdividing of Houston into four areas for purposes of surveillance and enforcement and to the fact that surveillance is done on a 24-hour basis. The division of Houston into four areas allows inspectors from the Department of Health to become familiar with the types of industry and processes within the particular district where they are assigned. Also, sources develop a working relationship with the personnel assigned to that district and become aware that surveillance is done on a routine basis.

Because surveillance is done by car, boat, and helicopter on a 24-hour basis, the city can respond to any emergency or complaint anywhere in Houston within 15 minutes. This quick response capability of the program is important in dealing with upsets or problems where toxic material is involved, and the nighttime and weekend surveillance should inhibit any intentional non-compliance of sources.

(3) The Department of Health Has Especially Able Leadership

The Houston air pollution control program has expecially able leadership in Dr. Herbert C. McKee, Assistant Health Director for Pollution Control, and Mr. Kenneth W. Mackenzie, Jr., Chief of Air Pollution Control. Both men bring years of prior experience and expertise to the City of Houston Department of Health. Before becoming the Assistant Director for Pollution Control, Dr. McKee, a Chemical Engineer by training, was the Chairman of the Texas Air Control Board from its inception in 1966 to 1973. Mr. Mackenzie, also an engineer by training, was the Director of Environmental Services for the Fairbanks North Star Borough immediately prior to joining the Houston program. Both Dr. McKee and Mr. Mackenzie have presented a number of technical papers and presentations in pollution control.

(4) The Department of Health Has Good Working Relationships With Other Offices Responsible for Air Pollution Control

Because the Houston Department of Health has developed good working relationships with other offices responsible for air pollution control on the state, local, and county levels, needless duplication is prevented in those cases where the jurisdiction of these offices overlap. As described in Chapter IV, the TACB regional offices and Houston participate in permit inspections as well as investigations relating to upset and maintenance problems. Both offices hold monthly meetings to discuss enforcement as well as other matters dealing with city air pollution control. The City of Houston Department of Health and the Harris County Office of Air Pollution Control cooperate in handling complaints and investigations within the city limits and in handling those sources within the Houston Ship Channel which may be within the jurisdiction of both agencies. Communication with the City Legal Department has been generally good, although enforcement problems may be encountered reflecting different priorities within the City Legal Department and case preparation problems. Those problems which have arisen with the City Legal Department are described in more detail in the potential problems section of the evaluation.

(5) The Department of Health Has an Effective Training Program

An effective training program at the Department of Health composed of formal meetings and field work increases employee effectiveness. Enforcement meetings are held on a weekly basis to review the past week and discuss current problems. Many times guest speakers are included from the state or EPA. Also, monthly meetings are held to discuss the latest training courses and to distribute enforcement information or guidelines. New employees in surveillance serve a one-month training period in each of Houston's four districts. This orientation helps familiarize them with the full range of sources and processes in the Houston area. New employees in enforcement are also given a training manual of the TACB regulations and administrative procedures.

2. POTENTIAL PROBLEMS

Although it is premature to make a definitive evaluation of the agency's effectiveness prior to conducting source visits and constructing source emission profiles, it is possible at this stage to draw some preliminary conclusions as to potential problems in the city of Houston air pollution program. These preliminary evaluations address the following areas:

- Enforcement
- Permits - Administrative Duplication
- Surveillance - Sulfur Oxides and Hydrocarbons
- Manpower.

(1) Only a Small Proportion of Cases Referred to the City Legal Department for Litigation Are Later Filed

The small number of cases filed by the City Legal Department reflects both the priorities and constraints of the Houston City Legal Department and the csse preparation by the Department of Health. Of the number of cases prepared for litigation and referred to the City Legal Department, only a small proportion of these are later filed by the City Attorney. For example, in 1977, 24 cases were referred to the City Legal Department for prosecution. Of these 24, 12 were referred by the City Legal Department to the County District Attorney for prosecution as a criminal misdemeanor. This resulted in 5 fines under $500 and 7 cases dismissed in court. Of the remaining 12 cases held by the City Legal Department, 3 were settled out of court, 2 were filed, and 7 were held.

As discussed in Chapter IV, considerable time elapses from the referral of an air pollution case to the Legal Department for prosecution and the filing or some other disposition of the case. In some instances the Legal Department may hold a case for several years without taking any action. One reason for the delay given in our interview with the Legal Department was that many times other matters within the Department were given priority above air pollution cases. The Legal Department is responsible not only for other environmental areas in addition to air pollution, but also other substantive legal areas such as labor and criminal law. Also, the City Legal Department suffers from a shortage of manpower and high turnover resulting

in the Office maintaining only a few attorneys experienced in litigating air pollution cases. Thus, it takes additional time for new attorneys to become familiar with the air pollution area. Secondly, the Legal Department expressed concern that many cases prepared by the Department of Health were based on violations of regulations which were difficult to prove in court because no measurement of the violation was taken. Nuisance violations and violations of the regulation prohibiting excessive visible emissions were cited as examples. The apparent desirability of having quantitative proof of violations suggests that the use of stack tests, opacity, and property line ambient measurements to quantify violations should be increased in order to shift the enforcement program emphasis from traditionally local program concerns such as nuisance and complaints to cases related to such air quality problems as stack or fugitive emissions.

Another potential problem in the enforcement area is confusion which sometimes arises because sources are within the jurisdiction of more than one agency responsible for air pollution control. In the Ship Channel Industrial District for instance, some sources have emission points under the jurisdiction of the Houston Department of Health and other emission points in the same facility under the jurisdiction of the state and county. In one case the Department of Health issued a notice of violation based on an emission point later found to be outside its jurisdiction. For the most part, however, these problems are minimized by good communication among the state, county, and city offices.

(2) <u>An Overlap in Responsibility Occurs in the Administration of the Permit Program That Indicates a Duplication of Efforts Between the TACB and the Houston Department of Health</u>

An overlap in responsibility occurs between the TACB and the Department of Health in the administration of the permit program because both agencies perform separate engineering evaluations to determine permit requirements for new and modified sources. After a source applies to TACB headquarters for a construction or operating permit, copies are sent to the regional TACB office in Houston and the Houston Department of Health. The TACB regional office and the DOH perform separate engineering evaluations focusing on process

parameters and control equipment efficiency. In addition, a joint inspection is performed to verify the information in the permit application and to ensure that the proposed site of the new facility will not constitute a nuisance. Comments are then sent to TACB headquarters in Austin where another engineering evaluation is completed and in many cases a computer model is used to determine the effect of the proposed emissions on air quality.

According to DOH and TACB regional staff, the purpose of the dual inspection is to ensure that problems resulting from local conditions not apparent in Austin will be addressed in the permit process. However, TACB headquarters personnel indicated that very few of the permit applications are substantively altered as a result of input from the Houston Department of Health. Also, DOH receives very little feedback from TACB headquarters on the comments made by the Department of Health.

One alternative for improving the administrative efficiency of the permit program suggested by DOH staff is to divide responsibility for portions of the permit program between the two agencies with no overlap. For example, DOH could make many of the preliminary engineering calculations as well as provide comments concerning any unusual local conditions to the TACB. The TACB could then rely on the preliminary information submitted from the DOH and determine the air quality impact of the proposed facility, using air quality modelling if necessary.

(3) Surveillance Activity Related to Sulfur Dioxide and Hydrocarbon Emissions Appears Limited

Surveillance activity relating to sulfur dioxide and hydrocarbon emissions is very limited compared to surveillance relating to particulate matter. There are several possible reasons for this. First, Houston does not have a serious sulfur oxide problem because many of the industrial processes are gas-fired. Secondly, much of the Houston surveillance program is structured to detect emissions by sight rather than by measurement. Thus, invisible emissions may go undetected. Finally, concerning hydrocarbons, the hydrocarbon regulations are equipment standards with many engineering parameters mandated to prevent the escape of volatile hydrocarbons into the atmosphere. Additional engineering expertise may be needed to verify many of the technical parameters necessary to determine compliance.

TACB and DOH personnel suggest that one way to increase surveillance of both sulfur oxides and hydrocarbons is greater use of property line ambient sampling measurements. In the case of hydrocarbons, no ambient property line regulation exists in Texas, although the state has considered developing such a standard. Unfortunately, the equipment to sample hydrocarbons is less developed and less reliable than the equipment used to measure sulfur oxides or particulate matter. Also, at the present time, it is not clear what role hydrocarbon emissions play in contributing to the oxident problem, especially in the Houston area. Until those hydrocarbon issues are resolved, the TACB is likely to continue to enforce the present regulations, rather than adopt new regulatory requirements.

(4) The Department of Health Program Has Been Hindered by Personnel Turnover

Turnover at both the top and bottom of the Houston air pollution control program has been great, primarily because of the relatively low salaries. Although Ken Mackenzie has been involved with the program for four years as Chief of Air Pollution Control, during the prior seven-year period there had been six directors. In order for new personnel to be hired, they must qualify for both the state merit system and the Houston civil service. Even after this process is completed, in many cases the position which is offered pays much less than an equivalent position on the state level or in private industry. In addition to the fact that the initial starting salary is very low and the hiring process is slow and involved, citywide budget constraints have prevented grade or in-step pay increases. It is therefore very difficult to hire and keep productive people.

APPENDIX A

ENTRY LEVEL SALARIES

AIR POLLUTION CONTROL

POSITIONS AND ENTRY SALARIES LEVELS

September, 1978

CITY POSITIONS	CITY SALARY BI-WEEKLY
Environ. Tech. I	$418
Environ. Tech II	468
Environ. Tech III	536
Environ. Tech IV	602
Environ. Tech V	719
Engr. I	$507
Engr. II	590
Engr. III	654
Engr. IV	716
Engr. V	802
Clerk I	$225
Clerk II	265
Clerk III	300
Steno. I	$300
Steno. II	360
Secretary	320
Instrument Tech.	$490
Helicopter Pilot	464
Meteorologist	446
Pollution Enforcement Coordinator	450
Health Program Specialist	380

APPENDIX B

POSITIONS DESCRIPTIONS

Class Code: 30.0

CITY OF HOUSTON

TECHNICIAN I, ENVIRONMENTAL

Operating Title: _____ D. O. T. Code: 168.287

I. PRIMARY FUNCTION:

Under close supervision, performs beginning level routine planning, technical or investigative work involved in the detection, analysis, and elimination or control of pollution health hazards. Works independently or as a memeber of a team with work being reviewed in progress and/or by the evaluation of reports as to technique, quality and adherence to established policies and procedures.

II. DUTIES AND RESPONSIBILITIES:

A. Receives complaints concerning sources of pollution and conducts investigations and surveys in the field of water and/or air pollution.

B. Assists in the evaluation of results of investigations and surveys in regard to environmental health aspects.

C. Assists in the operation of water pollution instruments and equipment used to collect and analyze water samples.

D. Prepares reports concerning findings of inspections and investigations.

E. May develop plans to control and eliminate pollution in the operation of City facilities.

F. May develop plans for the transportation of waste to treatment facilities and prepare layouts and needs for the future based on projected waste loads.

G. May develop programs to meet standards set by State at the present and the future.

H. Performs other duties as assigned.

III. QUALIFICATIONS:

A. Requires a Bachelor's Degree in Physical Science, Biological Science, or Engineering.

B. High School diploma or G. E. D. equivalent and four (4) years of experience in environmental control or investigation may be substituted for the above requirements.

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IV. KNOWLEDGE, SKILLS AND ABILITIES:

A. Must have a thorough knowledge of Local, State, and Federal Pollution laws, procedures and policies.

B. Must have demonstrated abilities in planning and organizing pollution control programs, supervising technical personnel, and assuming and carrying our responsibilities.

V. CAREER LADDER:

A. Technician I, Environmental

B. Technician II, Environmental

C. Technician III, Environmental

Class Code: 30.1

CITY OF HOUSTON

TECHNICIAN II, ENVIRONMENTAL

Operating Title: _____ D.O.T. Code: 003.281

I. PRIMARY FUNCTION:

Under general supervision, performs planning technical or investigative work involved in the detection, analysis, and elimination or control of pollution health hazards. Works independently, as a member, or as a leader of a team with work being reviewed in progress and through evaluation of reports as to technique, quality and adherence to established policies and procedures.

II. DUTIES AND RESPONSIBILITIES:

A. Investigates complaints regarding sources of pollutants and takes source samples of suspected pollutants.

B. May observe emissions for required period to determine violation conditions or compliance with established pollution standards.

C. May act as leader and supervisor of sampling or survey team, offering direction as to proper techniques and procedures to be used in taking samples or making surveys.

D. Prepares reports on surveys, investigations, and observations that may be used to make corrective recommendations or as evidence in the prosecution of violators.

E. Assists in the preparation and presentation of data for legal actions concerning pollution violators.

F. Installs, operates, and services instruments and equipment used to collect, count and analyze pollution samples.

G. May plan projected wasteloads and cost. Implements plans, changes and concepts into operations to control future pollution problems.

H. Performs other duties as required.

III. REQUIREMENTS:

A. Requires a Bachelor's Degree in science or engineering with a minimum of one (1) year pollution control or closely related work experience.

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B. May substitute a High School diploma and five (5) years experience for the above degree and experience.

IV. KNOWLEDGE, SKILLS, AND ABILITIES:

A. General knowledge of local, state, and federal ordinances and laws pertaining to environmental health.

B. General knowledge of environmental health engineering, chemical engineering practices and radiological safety techniques.

C. Thorough knowledge of the operation, use, and care of detection equipment used in industrial hygiene, air pollution and radiological health.

V. CAREER LADDER:

A. Technician II, Environmental

B. Technician III, Environmental

C. Technician IV, Environmental

Class Code: 30.2

CITY OF HOUSTON

TECHNICIAN III, ENVIRONMENTAL

Operating Title: _____ D.O.T. Code:003.281

I. PRIMARY FUNCTION:

Under general supervision, performs skilled planning technical and investigative work involved in the detection, analysis, and elimination or control of pollution health hazards. Works independently, as a member or as a leader of investigation, survey, and sampling teams involved in gathering pollution data.

II. DUTIES AND RESPONSIBILITIES:

A. May direct and schedule work of investigation, survey and sampling teams.

B. Reviews investigation survey and sampling reports for adherence to established standards as to techniques, quality, procedures and policies.

C. Inspects and directs operation and maintenance of equipment and instruments used to measure and collect pollution samples.

D. Correlates pollution data and prepares routine and special reports concerning compliance with established pollution standards.

E. Consults with industrial representative and the public concerning pollution criteria, standards and regulations.

F. May plan projected wasteloads and cost. Implements plans, changes, and concepts into operations to control future pollutions problems.

G. Installs, operates and services instruments and equipment used to collect, collect and analyze pollution samples.

H. Performs related duties as assigned.

III. REQURIEMENTS:

A. Requires a Bachelor's degree in science or engineering with a minimum of three (3) years pollution control or closely related work experience.

B. Master's degree in science or engineering and one (1) year's experience in the application of scientific principles to the detection and evaluation of pollution problems may be substituted for the above requirement.

IV. KNOWLEDGE, SKILLS, AND ABILITIES:

A. Thorough knowledge of local, state, federal pollution laws, procedures and policies.

B. Demonstrated abilities in planning and organizing pollution control programs, supervising technical personnel, and assuming and carrying out responsibilities.

V. CAREER LADDER:

A. Technician III, Environmental

B. Technician IV, Environmental

C. Technician V, Environmental

Class Code: 30.3

CITY OF HOUSTON

TECHNICIAN IV, ENVIRONMENTAL

Operating Title: _____ D.O.T. Code: 185.287

I. PRIMARY FUNCTION:

Under general supervision, performs supervisory and advance technicial work ir pollution control. Works independently with work being reviewed through consultations and evaluation of pollution programs.

II. DUTIES AND RESPONSIBILITIES:

A. Assists program director in formulating and preparing specifications for scheduling and implementing a city wide pollution program.

B. May plan and supervise work activities of a staff of pollution control personnel engaged in enforcement or engineering functions.

C. Reviews reports from subordinates for technical correctness and competence.

D. May correlate information and data from subordinates' reports, and prepares special reports.

E. May analyze and evaluate special conditions and situations involving pollution control problems.

F. Advises and consults with the public, professional groups and industrial representatives concerning pollution criteria, regulations and abatement programs.

G. May supervise or conduct the training of newly employed pollution personnel.

H. Performs other duties as assigned.

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III. QUALIFICATIONS:

A. Requires a Bachelor's Degree in science or engineering with four (4) years pollution control or closely related work experience.

B. A Masters Degree in Science or engineering with two (2) years experience pollution control or closely related work experience may be substituted for the above requirement.

IV. KNOWLEDGE, SKILLS AND ABILITIES:

A. Must have a thorough knowledge of local, state, and Federal Pollution Laws, Procedures and Policies.

B. Must have demonstrated abilities in planning and organizing pollution control programs, supervising technical personnel, and carrying out responsibilities.

V. CAREER LADDER:

A. Technician IV, Environmental

B. Technician V, Environmental

Class Code: 30.4

CITY OF HOUSTON

TECHNICIAN V, ENVIRONMENTAL

Operating Title: _____ D.O.T. Code:

I. PRIMARY FUNCTION:

Under general direction, performs supervisory and technical work involved in directing the enforcement activities of the pollution control program. Works with broad latitude in the enforcement areas and is responsible for planning, execution and coordination of enforcement activities.

II. DUTIES AND RESPONSIBILITIES:

A. Plans and gives general direction to the activities of a staff of pollution control personnel engaged in enforcement functions.

B. Reviews reports for technical correctness and competence.

C. May coordinate as necessary with other segments of the program such functions as: conducting and maintaining an emmission and source inventory, investigating complaints, inspecting facilities and equipment, operating monitoring equipment as required and conducting surveys and special studies.

D. Supervises the enforcement of emergency episode procedures for the agency.

E. Evaluates candidates for employment and existing personnel for promotion within the enforcement section and implements training programs for enforcement personnel.

F. May appear in court as an expert witness and at hearings concerning pollution.

G. Develops proposals for needed new standards, regulations and laws, and implements appropriate procedures to enforce local, state, and federal laws and regulations.

H. Performs other duties as assigned.

III. REQUIREMENTS:

A. Requires a Bachelor's degree in science or engineering and a minimum of five (5) years responsible work experience in pollution control or a related environmental program which includes at least one (1) year administrative or supervisory work experience.

B. A Master's degree in science or engineering with three (3) years of experience in pollution control or closely related work experience may be substituted for the above requirement.

IV. KNOWLEDGE, SKILLS, AND ABILITIES:

A. Must have knowledge of the principles and practices essential to the identification, control and reduction of pollution.

B. Must have knowledge of the laws, rules, and regulations applicable in the pollution control program and have a general knowledge of administration, supervision and training.

C. Must have the ability to supervise the activities of professional and administrative staff.

D. Must be able to cooperate and coordinate the enforcement activities with other pollution control agencies.

E. Must have ability to establish and maintain positive and productive relationships with associates, public and private officials and the general public.

V. CAREER LADDER:

A. Technician V, Environmental.

B. Chief, Air Pollution Control.
or
Chief, Water Pollution Control.

Class Code: 64.2
Workers' Comp. Code: 9409

CITY OF HOUSTON

INSTRUMENT TECHNICIAN

Operating Title: _____ D.O.T. Code: 003.281

DESCRIPTION OF WORK

General Statement of Duties: Performs repairs and servicing of instruments and equipment used in detection, sampling and analysis of air pollutants or wastewater. Work is reviewed through evaluation of completed repair and installation projects.

Supervision Received: Works under general supervision

Supervision Exercised: None

EXAMPLES OF DUTIES*

Calibrates, maintains and repairs various air monitoring equipment, switch-over valves, water lines, or other instrumentation depending on the operational program of the department.

Repairs, calibrates and performs quality control checks on high volume air samples (EPA).

Inspects and checks all instruments and equipment for any faulty maintenance, or for proper operation at job site, plant or lift station.

Modifies or fabricates equipment for special purposes to carry out and complete assigned jobs.

Schedules jobs according to priority of work for efficient operation and effective results. Prepares proper tools and material for jobs assigned.

Maintains an adequate supply or inventory of parts and materials for installation, or operation of equipment such as mobile air monitoring equipment, etc.

Performs periodic maintenance of various air sampling and monitoring equipment.

Keeps records of time, incoming and outgoing parts and equipment, equipment requisitions and pricing. Reports in writing and verbally completed and uncompleted jobs.

May be subject to emergency callout for chlorination repair and emergency bleach feed for by-pass in treatment plants and lift stations and time of day and night.

EXAMPLES OF DUTIES* (Cont.)

May install air monitoring systems in mobile trailers.

QUALIFICATIONS FOR APPOINTMENT

Knowledge, Skills and Abilities: Thorough understanding and working knowledge of electrical and chemical principles.

Must have a high mechanical aptitude. Should have the desire and initiative to learn to repair instruments and equipment from manuals and instruction books.

Education: High school diploma or GED certificate preferred.

Experience: Four (4) years of experience in the repair, calibration and installation of instruments and equipment.

Special training in the repair, calibration and installation of instruments and equipment may be substituted for the above requirement on a one-to-one basis.

Physical Requirements and Working Conditions: Ability to lift objects weighing up to fifty (50) pounds may be necessary.

The classification may necessitate moderate amount of reaching, handling, fingering, climbing, and standing at various intervals. Candidate may be subject to extreme temperatures; wet and/or humid weather.

CAREER LADDER

Instrument Technician

*Any one position may not include all of the tasks listed, nor do the examples necessarily include all of the tasks performed.

(Rev. 04-07-78 EGL)
Civil Service Department
Houston, Texas

CITY OF HOUSTON

ENGINEER III, PUBLIC HEALTH

Operating Title:_____ D.O.T. Code: 005.081

FUNCTION:

Under general supervision, performs supervisory and advanced professional engineering work in an assigned public health service of the Health Department. Serves in an advisory capacity to city officials involved with various environmental engineering sanitation programs.

PRIMARY TASKS PERFORMED:*

Participates in conferences with consulting engineers, research institutions, state and federal agencies, and municipal and industrial officials regarding problems of a public health engineering nature.

Consults with municipal officials and planning consultants concerning urban planning programs, examines applications for urban planning assistance and prepares urban planning contracts for submission to the appropriate state and federal funding agencies.

Reviews plans and specifications submitted by consulting engineers covering proposed construction of water and/or sewerage systems, swimming pools, and public drinking water facilities to assure that all laws and regulations have been met.

Makes field inspections and surveys of water and sewerage serving the community and industrial establishments, food processing facilities, and bottled water and ice operation for sanitary hazards; prepares reports containing recommendations for correction of defects.

SECONDARY TASKS PERFORMED:*

Periodically reviews tabulation of bacteriological examinations and chemical analysis reports and answers requests for technical information.

Participates in training seminars covering environmental sanitation problems.

Assists in hospital planning and construction projects and the preparation of program plans and evaluations.

QUALIFICATIONS:

Education and Experience:

A bachelor's degree in chemical engineering or related engineering field and seven (7) years of engineering experience which includes one (1) year of supervisory or administrative engineering responsibility are required.

A master's degree and five (5) years of professional experience including one (1) year of supervisory or administrative engineering responsibility may be substituted for the above requirement.

A Professional Engineer's Liscense (State Registration) is required.

Knowledge, Skills and Abilities:

Thorough knowledge of principles and practices of public health and sanitary engineering, State and Federal laws pertaining to sanitary engineering, occupational health, and public health; structure and functions of public health organizations.

Ability to establish and maintain effective working relationships, dealt tactfully with the public, work professionally and resourcefully with public health engineering problems.

CAREER LADDER:

Public Health Engineer III

*Any one position may not include all of the tasks listed, nor do the examples necessarily include all of the tasks performed.

Class Code 79.8

CITY OF HOUSTON

PUBLIC HEALTH ENGINEER II

Operating Title: _____ D.O.T. Code: 005.081

FUNCTION:

Under general supervision, performs advanced professional engineering work in an assigned public health service of the Health Department. Serves in an advisory capacity to city officials involved with various environmental engineering sanitation programs.

PRIMARY TASKS PERFORMED:*

Conducts field investigations, inspections and efficiency studies of municipal water systems and waste treatment facilities, domestic and industrial waste facilities, and streams into which wastes are discharged.

Investigates insect vector problems, complaints of unsanitary conditions, problems of air pollution, ionizing radiation and industrial hygiene.

Reviews plans and specifications of water and sewages facilities, schools, swimming pools and other public installations to insure proper control of pollutant discharge and reduction of radiation exposure.

Analyzes effectiveness of control equipment and regulations. Performs other studies concerning attainment and maintenance of ambient air quality standards.

SECONDARY TASKS PERFORMED:*

Conducts surveys of raw water quality and shellfish producing areas and assists in the implementation of programs required for pollution control and treatment and disposal of municipal and industrial wastes.

Attends and participates in gatherings where matters of public health and environmental sanitation are discussed.

Keeps abreast of new developments in the field of environmental protection by studying technical publications, and attending seminars and meetings on air pollution control and other related topics.

QUALIFICATIONS:

Education and Experience:

A bachelor's degree in civil engineering or related field and five (5) years of engineering experience are required.

A master's degree and three (3) years of professional experience may be substituted for the above requirement.

A Professional Engineer's License (State Registration) is required.

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QUALIFICATIONS Continued:

Knowledge, Skills and Abilities:

Thorough knowledge of principles and practices of public health and sanitary engineering, State and Federal laws pertaining to sanitary engineering, occupational health, and public health; structure and functions of public health organizations.

Ability to establish and maintain effective working relationships, deal tactfully with the public, work professionally and resourcefully with public health engineering problems.

CAREER LADDER:

Public Health Engineer II.

Public Health Engineer III

*Any one position may not include all of the tasks listed, nor do the examples necessarily include all of the tasks performed.

CITY OF HOUSTON

ENGINEERING ASSISTANT

Operating Title:_____ D.O.T. Code: 005.081

FUNCTION:

Performs beginning engineering work in an assigned public health service of the Department of Health. Work involves serving in an advisory capacity to city officials on environmental sanitation problems.

Work is performed under the close supervision of a professional engineer or technical supervision of an assigned service.

PRIMARY TASKS PERFORMED:*

Conducts field investigations, inspections and efficiency studies of municipal water systems and waste treatment facilities, domestic and industrial waste facilities, and streams into which wastes are discharged.

Investigates insect vector problems, complaints of unsanitary conditions, problems of air pollution, ionizing radiation and industrial hygiene.

Reviews plans and specifications of water and sewages facilities, schools, swimming pools and other public installations to insure proper control of pollutant discharge and reduction of radiation exposure.

Conducts surveys of raw water quality and shellfish productin areas and assists in the implementation of programs required for pollution control and treatment and disposal of municipal and industrial wastes.

SECONDARY TASKS PERFORMED:*

Attends and participates in gatherings where matters of public health and environmental sanitation are discussed.

QUALIFICATIONS:

Education and Experience:

A bachelor's degree in Civil Engineering or a related engineering field.

No formal work experience is required.

APPENDIX C

HOUSTON AIR POLLUTION CONTROL PROGRAM
MANPOWER, SALARY RATINGS, AND TOTAL AND AVERAGE SALARIES

APPENDIX C
Houston Air Pollution Control Program
Manpower, Salary Ratings, and Total and Average Salaries

1970

	Positions	Total Salaries	Average Salaries
Air Pollution Program Director	1	14,600	14,600
Air Pollution Hygienist	6	56,760	9,460
Meteorologist	1	10,200	10,200
Air Pollution Technician	21	170,045	8,097
Chemist	4	38,530	9,632
Personnel Clerk	1	4,420	4,420
Stenographer	2	9,880	4,940
Air Pollution Investigator II	3	21,220	7,073
Clerk	2	8,600	4,300
Health Program Specialist	1	9,000	9,000
Total Positions & Salaries	42	343,255	8,172

1971	Positions	Total Salaries	Average Salaries
Air Pollution Program Director	1	15,000	15,000
Air Pollution Hygienist	9	91,100	10,122
Meterorologist	1	7,532	7,532
Air Pollution Technician	21	193,691	9,223
Chemist	4	37,927	9,481
Stenographer	3	15,660	5,220
Air Pollution Investigator II	3	22,236	7,412
Instrument Technician	1	8,652	8,652
Health Program Specialist	1	9,819	9,819
Clerk II	1	5,220	5,220
Clerk I	4	18,113	4,528
Total Positions & Salaries	49	424,950	8,672

Houston Air Pollution Control Program
Manpower, Salary Ratings, and Total and Average Salaries
(Continued)

1972

	Positions	Total Salaries	Average Salaries
Air Pollution Program Director	1	17,500	17,500
Air Pollution Hygienist	8	77,113	9,639
Meterorologist	1	10,088	10,088
Air Pollution Technician	30	279,960	9,332
Chemist	4	44,203	11,050
Stenographer	5	29,665	5,933
Air Pollution Investigator II	3	27,898	9,299
Health Program Specialist	1	11,948	11,948
Clerk II	1	6,580	6,580
Clerk I	2	10,960	5,480
Public Health Engineer	1	14,800	14,800
Total Positions & Salaries	57	530,721	9,310

1973

	Positions	Total Salaries	Average Salaries
Assistant, Engineering	3	20,157	6,719
Chief/Assist t Chief, Air Pollution Control	1	5,133	5,133
Chemist I	1	9,375	9,375
Chemist II	2	20,788	10,394
Chemist III	1	12,516	12,516
Clerk I	3	13,050	4,350
Clerk II	2	12,917	6,458
Clerk III	1	1,741	1,741
Engineer II, Public Health	2	19,919	9,959
Hygienist IV	1	13,386	13,386
Investigator, Air Pollution	11	86,848	7,895
Meteorologist	1	13,984	13,984
Pilot	2	13,000	6,500
Specialist, Health Program	1	11,789	11,789
Stenographer	3	18,601	6,200
Technician I, Air Pollution	19	152,475	8,025
Technician II, ir Pollution	11	90,073	8,188
Technician III, ir Pollution	8	78,101	9,762
Technician IV, Air Pollution	2	26,772	13,386
Technician V, Air Pollution	1	7,475	7,475
Technician, Instrument	1	10,478	10,478
Pension & Insurance			
Total Positions & Salaries	77	747,171	9,703

APPENDIX D

SAMPLES OF RECORDS KEPT BY DOH

APPENDIX D
DOH Upset Log

CITY OF HOUSTON

AIR POLLUTION CONTROL PROGRAM
RULE 7 AND 8 LOG

Date Report Form Received	Company Name & Individual Calling	Date & Time of Notification	Source/Control Device Affected	Upset or Maintenance	Nature & Level of Emissions	Date & Time of Incident	Expected Duration	Cause of Emissions	Date of Investigation	Rule 12 Exemption	Notice Issued Rule #	Call #
1-8-79				START UP		1-6-79 23:50	3 min	START UP	1-7-79		144 NO	
1-7-79		1-7-79 0615		START UP	NONE	1-7-79 0600	—	START-UP	1-7-79		144 NO	
1/7/79		1/7/79		UPSET	SMOKE	1/7/79 08:41	1 HR	DRY PLANT 0.1 Sp. II	1/7/79		26	198
1/1/79	LONE STAR STEEL	1/1/79 10:00		SHUT DOWN	NONE	1/1/79 10:00	SEVERAL DAYS	SHUT DOWN	1/7/79		26	198
1-7-79	AJ							THERMAL OXIDATION UNIT	1-7-79		NO.	196

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APPENDIX D
Legal Case Referral Log

1978 Legal Cases 1978

	Company	Address	Type	Date Case Prepared	Administrative Meeting	Date to Asst. Chief	Date to Chief	Date to Agency Counsel Director	Date to Assist. Director	Date Returned from Director	Date to EPA	Date to D.A.	Date Filed	Disposition
1.	Texas Star Supply #1	3700 Holmes	III	1-10-78	5-25-78	1-30-78	2-2-78	2-3-78			2-3-78	1		
2	S&R Oil #1	14349 Mantua	III	2-6-78	12-7-77	2-9-78	2-13-78	2-13-78			2-14-78			
3.	Canyon City Foundry #3	6801 Brewster	II	2-13-78	4-19-78	3-6-78								
4	S&R Oil #2	14349 Mantua	III	3-17-78	12-7-77	3-20-78	3-21-78				3-21-78			
5.	Chester #2	9701 Mendenhall	III	3-24-78	3-30-78	3-30-78	4-3-78							
6.	Hot Mix #11	1681 Brittanica	II	5-5-78	8-31-78	6-28-78	7-5-78	8-15-78	9-19-78	9-20-78				
7	IMCO #7	6909 Wallerville	III	7-14-78	11-2-78	7-11-78	7-20-78	8-15-78	9-19-78	9-20-78				
8	Hot Mix #12	1681 Brittanica	II	7-31-78	8-31-78	8-15-78	8-15-78	8-15-78	9-19-78	9-20-78				
9	S&R Oil #3	14349 Mantua	III	9-5-78		9-6-78	9-6-78	9-8-78	9-19-78	9-20-78				
10	Chester Oil #3	9701 Mendenhall	II	8-25-78		9-13-78	9-13-78	9-8-78	9-19-78	9-20-78				
11	Lone Star (Bennington)	302 Bennington	I	8-17-78		9-14-78								
12	S&R Oil #4	14349 Mantua	III	12-15-78		10-16-78	10-19-78	10-19-78	10-20-78					
13	Jay Tex Products #5	7320 Eagle Pass	III	12-7-78		12-8-78	12-20-78	12-20-78	12-20-78					
14	MSC Supply		III	12-27-78		12-28-78	12-20-78	12-20-78	12-20-78					
						1-8-79								

APPENDIX D
DOH Complaint Log

Complaint	DATE	TIME	COMPLAINANT'S NAME	ADDRESS	PHONE NUMBER	SOURCE	SOURCE	NOTICE GIVEN	WIND DIR.	REMARKS
5652	9-20-78	2300	JANKING (do not receive Temple)	927 W. Temple	864-6069	—	COMPLIANCE S.P. Wood T. Pl.	YES 5	193	odor - burning rubber
5653	9-20-78	2325	De Leon (do not receive Temple)	212 Munford	862-8563	—	CONFIRMED S.P. Wood T. Pl.	YES 5	195	odor (creosote)
5654	9/21/78	0330	Mrs Quigley Wells	1710 Shadyside Ave	636 4338	UNKnown	unconfirmed	NO	152	odor
5655	9/21/78	11:50	Mrs Elliott	5100 Fulton	697-6229	Unknown	unconfirmed	NO	151	odor
5656	9/21/78	14:10	no listing	3425 Dorse	945 4650	Jamison Cap Complex	Confirmed Jamison Cap	NO	192	Smoke
5657	9/21/78	14:15	no listing	5951 Shamrock	938 3209	non-Emergency	unconfirmed	NO	162	odor
5658	9/22/78	23:00	B. Mann	7730 Rockdale	771-1414	Plant company cautionary alert	confirmed	yes	197	odor
5659	9/22/78	06:35	Mrs. D. Dann	9925 Mango	944-5800	unknown	unconfirmed	NO	161	odor SMOTHERING
5660	9/22/78	0950	C. Kilpatrick	Ellington Air Force	481-4405 x22-3	Hughes Naval Ref	confirmed Hughes 2485	NO	161	Smoke
5661	9/23/78	11:00	Mrs Cornelius	1613 Rommel	522-1543	Hughes	unconfirmed	NO	171	Smoke
5662	9/23/78	14:40	Mrs O. Jones Stevens	6230 Findley	649 6105	Unknown	unconfirmed	NO	163	odor
5663	9/23/78	15:10	Mrs Ziegler	517 Reid	694 7681	Custom Van	confirmed	YES	152	odor
5664	9/24/78	17:45	Betty Abernathy	1800 E 26th	947-1526	Ferrell Cement	unconfirmed	NO	193	dust
5665	9/22/78	21:20	Violet Glover	8220 Findley	698 6101	Pelton Tex	unconfirmed	NO	191	odor
5666	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	unconfirmed	NO	192	[illegible]
5667	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	unconfirmed	NO	192	[illegible]
5668	9/25/78	1845	Cecil Hedges	7816 Monroe	991-0114	Dusty Rhodes Ref	Confirmed	YES	191	dust
5669	9/25/78	1730	Mr Edwin Wade	4631 Jackson Rd.	641-4170	Dusty Rhodes	Confirmed	YES	194	Odor
5670	9/25/78	1925	Tom Peterson	0 S. Lynnhaven	499-[illegible]	Unknown	Confirmed	YES	194	Chemical odor
5671	9/25/78	1945	Mrs Williams	3150 Universal	894 4324	Unknown	Confirmed	YES	194	Chemical odor
5672	9/25/78	1955	M Hazelwood	4031 Old Edgewater Rd.	944-5778	Unknown	Confirmed	YES	194	Chemical odor
5673	9/26/78	01:45	Mrs Lolich	4111 Old Galveston Rd.	641-0150	Permian Basin	Confirmed	NO	165	odor
5674	9/26/78	10:30	[illegible]	[illegible]	946-9106	Unknown	unconfirmed	NO	162	odor

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APPENDIX D
DOH Permits Log

NAME NO	COMPANY	ADDRESS	UNIT OR TYPE OF ITEM	DATE OF APPLICATION	DATE ISSUED	DOH APPROVAL	U.S.C.G. APPROVAL	N.S.P.S. APPLICABILITY	REVIEWER
C-6258	PARKER BROTHERS	[illegible]	REMOVE SILO	[illegible]	[illegible]				DAVIDSON
C-6293	BODDEN METAL	3610 [illegible]	INCINERATOR		5-15-78	✓			NICHOLS
C-6065	ATLANTIC REFINING CO	[illegible]	TANK CLEAN PUMPING		5-15-78	✓			DAVIDSON
C-6002	CHAMPION PAPER	W. STANLEY & [illegible]	OIL CONVERSION						THEISS
C-6003	CHAMPION PAPER	W. STANLEY & [illegible]	OIL CONVERSION						THEISS
C-4802A	STAUFFER CHEMICAL CO	BLUE MOUNTAIN, AR	REGENERATION UNIT 2	3-[illegible]-78	6-12-78				DAVIDSON
C-6126	STAUFFER CHEMICAL CO	BLUE MOUNTAIN, AR	LIQUID SEAL PLANT	4-[illegible]-78	6-[illegible]-78				DAVIDSON
R-5120	TEXAS GAS [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	✓			SIDDIQI
C-6290	DRESSER INDUSTRIES	[illegible]	[illegible]	[illegible]-78					THEISS
X-270	CONTINENTAL FIRE ARMS	5610 [illegible]	SPRAY booth	[illegible]-6					THEISS
R-6129	QUENS ILLINOIS	44098 [illegible]	SHOP TRUCK REPAIR	[illegible]-78	10-6-78				DAVIDSON
X-287	STAUFFER CHEMICAL CO	[illegible]	TANK [illegible]	5-[illegible]-78	6-[illegible]	✓			DAVIDSON
C-6260-A	SHELL OIL COMPANY	DEER PARK	[illegible]	[illegible]	[illegible]			[illegible]	SIDDIQI
R-5604	THE BRAND Company	[illegible] MANUEL	[illegible]	[illegible]-78	9/2/78	W			SIDDIQI
C-6391	WILLIAM BRUCE #1	3800 [illegible]	REMOVE [illegible]	[illegible]-78	6-26-78				DAVIDSON
C-6354	G.A. [illegible]	[illegible]	[illegible]	[illegible]-78					THEISS
R-5229	ALBERT VENTS OF TEXAS	10 [illegible]	CONCRETE BATCH PLANT	[illegible]-78					DAVIDSON
C-6190	ETHYL CORPORATION	ETHYLBURG [illegible]	[illegible]	[illegible]-78	6-22-78				DAVIDSON
C-6263	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	SIDDIQI
X-276	GENERAL [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	✓		No Summary Made - Permit Issued Without	NICHOLS
C-6507	WILLIAM BRUCE #5	3800 [illegible]	REMOVE [illegible]	[illegible]	[illegible]				DAVIDSON
C-6485	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				THEISS
C-6491	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				THEISS
C-6324	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				THEISS
C-6508	WILLIAM BRUCE #3	3800 [illegible]	ASPHALT CONCRETE [illegible]	[illegible]-78	[illegible]				DAVIDSON
C-6491	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	✓			SIDDIQI
C-6[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]-78	✓			SIDDIQI
X-203	SOUTH COAST TERMINALS	[illegible] E. PCH AND SOUTH STREETS, LONG			6-5-78				NOT REQUIRED PER AGREEMENT
X-296	[illegible]	[illegible]	[illegible]	[illegible]	6-[illegible]-78				THEISS
R-3980	D.W. SILVER INC	3901 LENA	[illegible]	4/[illegible]/78	[illegible]	✓			THEISS
C-6569	E Z KART CORPORATION	[illegible]	[illegible]	4/24/78	10-10-78				DAVIDSON
R-5671	JEFFERSON [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	✓			NICHOLS
C-6570	ARMCO [illegible]	[illegible]	[illegible]	6/[illegible]-78	[illegible]	✓			NICHOLS
X-713	AMF THEISEN [illegible]	[illegible]	[illegible]	[illegible]	[illegible]				THEISS
C-6565	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			(52)	DAVIDSON

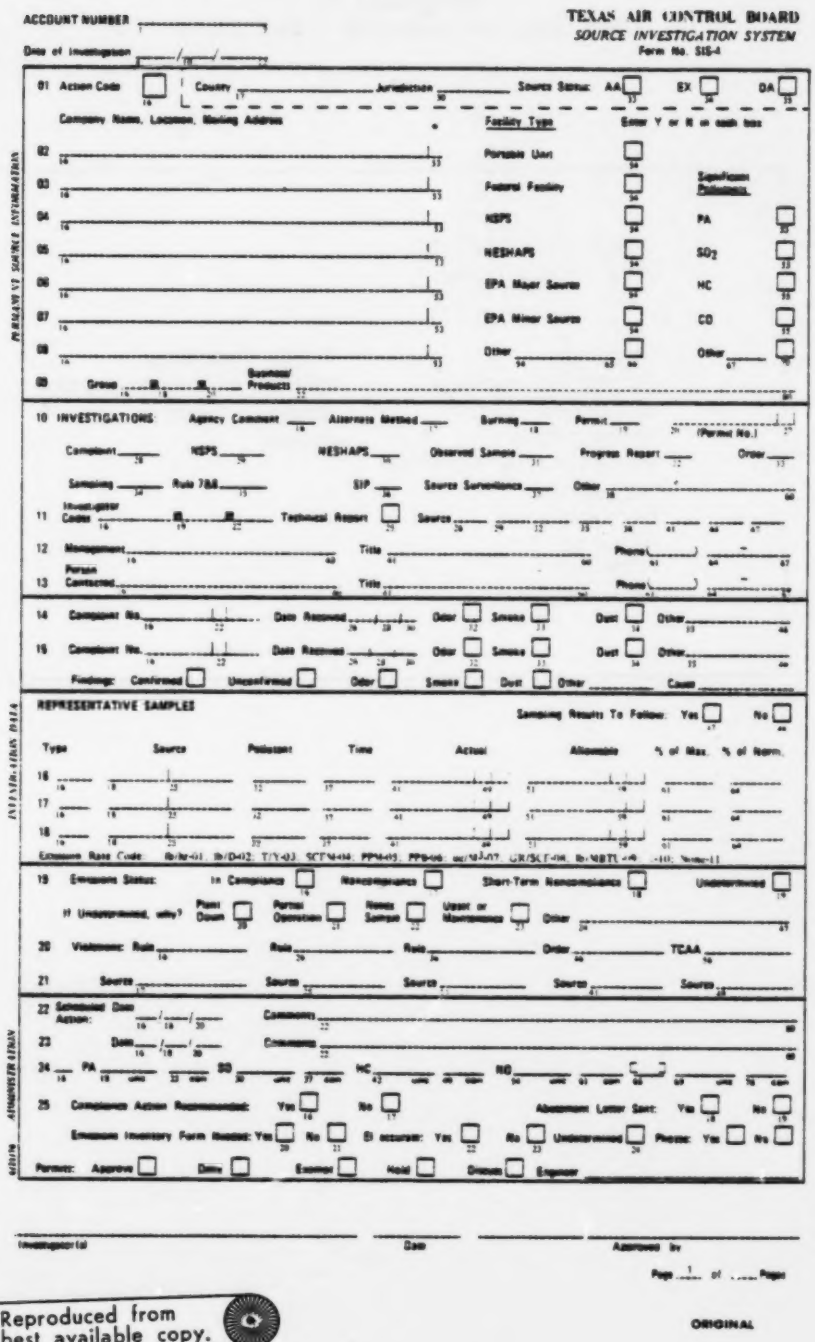
APPENDIX D
DOH Active Company Card File

V

CHAMPION PAPERS CO
Ship Channel Area

Complaints	Stack Sampling
Correspondence; II	Notice of Upset, Maint.
Emissions Inv.	Company Report
Photographs	Gases
Surveillance Reports	
Variances	
Particulates	
Opacity	
Drawings	
Legal Action	

APPENDIX D
Sample SIS Input Sheet



ACCOUNT NUMBER

Date of Investigation

TEXAS AIR CONTROL BOARD
SOURCE INVESTIGATION SYSTEM
Form No. SIS-4

01 Action Code | County | Jurisdiction | Source Status: AA EX OA

Company Name, Location, Mailing Address

Facility Type — Enter Y or N in each box

Portable Unit
Federal Facility
NSPS
NESHAPS
EPA Major Source
EPA Minor Source
Other

Significant Pollutants:
PA
SO_2
HC
CO
Other

02 03 04 05 06 07 08 09 Group | SIC | Business/Products

10 INVESTIGATIONS: Agency Comment | Alternate Method | Burning | Permit (Permit No.)
Complaint | NSPS | NESHAPS | Observed Sample | Progress Report | Order
Sampling | Rule 788 | SIP | Source Surveillance | Other

11 Investigator Code | Technical Report | Source

12 Management | Title | Phone

13 Person Contacted | Title | Phone

14 Complaint No. | Date Received | Odor | Smoke | Dust | Other

15 Complaint No. | Date Received | Odor | Smoke | Dust | Other

Findings: Confirmed | Unconfirmed | Odor | Smoke | Dust | Other | Cause

REPRESENTATIVE SAMPLES — Sampling Results To Follow: Yes No

	Type	Source	Pollutant	Time	Actual	Allowable	% of Max.	% of Norm.
16								
17								
18								

Emission Rate Code: lb/hr-01, lb/D-02, T/Y-03, SCFM-04, PPM-05, PPB-06, ug/M3-07, GR/SCF-08, lb/MBTU-09, -10, None-11

19 Emissions Status: In Compliance | Noncompliance | Short-Term Noncompliance | Undetermined
If Unconfirmed, why? Plant Down | Permit Operation | Heavy Smoke | Upset or Maintenance | Other

20 Violations: Rule | Rule | Rule | Order | TCAA

21 Source | Source | Source | Source | Source

22 Scheduled Date Action: | Comments

23 Date | Comments

24 PA | SO | HC | NO

25 Compliance Action Recommended: Yes No | Abatement Letter Sent: Yes No
Emissions Inventory Form Needed: Yes No | SI occurs: Yes No Undetermined | Photos: Yes No

Permits: Approve | Deny | Exempt | Hold | Discuss | Engineer

Investigator(s) | Date | Approved by

Page 1 of ____ Pages

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ORIGINAL

APPENDIX D
Reports Available from SIS[1]

Following are those canned reports which will be sent on a regularly scheduled basis through the system and the definition of those reports on an item by item basis.

ACTIVE ACCOUNTS LIST - BIMONTHLY

Account Number ..... The TACB Account Number

Company Name ..... The seven line listing of the company name, location, and mailing address. Also in this section are the Jurisdiction Code for the facility and the current group number associated with that facility. On the right hand side is the asterisk column setting out the mailing information lines.

Facility Type/Pollutants - This section will list the facility types (portable unit, federal facility, etc.) that apply to the plant and will list the pollutants that are over 100 tons uncontrolled for that plant.

Investigation Date ... This section will have a list of the investigations conducted on that facility along with the date of that investigation, the type of investigation conducted, and the permit number associated with any permit investigation.

Investigator ..... This section will hold the three number code for the investigator(s) involved with each investigation.

Emission Status ..... This section will give the latest Emissions status (Card 19) given to the plant along with any Rule, Order, or Act citations.

Abatement Letter ..... The Y or N designates whether or not an Abatement Letter was sent as a result of the investigation.

Compliance Action .... The Y or N designates whether or not Compliance action was required as a result of the investigation.

Business/Products .... The description of the type of business of the plant and the type of products it produces.

1 Excerpted from SIS Users Manual, pp. 40-43.

SPECIAL NOTES: This printout has a few minor errors which will be corrected before the next printout.

1. Permit and Sampling investigations incorrectly appear as date only.
2. Some printing will be spaced wrong, though the information will be correct, arranged alphabetically, and complete.
3. Permit investigations will not have the permit number printed out beside them.

INVESTIGATIONS CONDUCTED BY - MONTHLY

This is part of the investigations Summary Report. The word "BY" in the title means that this report will show who actually conducted the investigation. Investigations conducted by specific entities, i.e. Region, locals, etc., are keyed by the Investigator Code (Card 11) and the totals represent investigations conducted by the separate programs without regard to the location of the source investigated. Therefore, you may receive a report which includes some counties or sources not under your jurisdiction. This can happen in one of two ways: (1) due to the movement of portable units, and(2) the possibility of an investigator conducting an investigation outside his Region.

ACTIVE ACCOUNTS INVESTIGATED

This is the total number of unique active accounts that were investigated in the specified period.

TOTAL ACCOUNTS INVESTIGATED

This is the total number of unique accounts investigated during the specified period ("X" accounts, exempt accounts, and active account.).

Each local program has a section of its investigations. Also, such groups as EPA, Compliance, Permits, Source Evaluation, and other Central Office personnel are part of this printout. These investigations are listed in the report under those headings.

INVESTIGATIONS CONDUCTED IN - MONTHLY

This section represents the total number of investigations conducted in a region. This information is keyed to the Jurisdiction (Card 01) under the accoun number of the plant. The format is the same as the first section. Once again portable units cause a problem. When interpreting long term data, be aware that portable units carry the investigation record with the account number. Whenever the computer totals investigations of all accounts in one Region for a year, it will key on the

Jurisdiction code. This means that when a portable unit moves out of one Region and into another region, that causes all investigations on that unit to be credited to the Region that it moved into even though they were conducted by the Region it moved out of. This problem can be solved by special retrieval and is not evident over a short span (anything under two months). However, it should be kept in mind.

COMPLAINT NUMBER LOG - As Requested

This printout is self explanatory. It is merely a listing of all complaints processed through the SIS arranged numerically by the complaint number. The list will be broken down by Region and by Local program according to Jurisdiction Codes.

Account ..... The TACB account number.

Number ..... The complaint number assigned by the Regional Office, Central Office, or local programs.

Investigation Date. The date the complaint was investigated.

Date Received ..... The date the complaint was received.

Cause ..... The problem that initiated the complaint call.

SCHEDULED ACTION SUMMARY - Monthly

This printout shows the scheduled actions for the month of February only. It will normally be sent out monthly during the first week of the preceeding month. It reflects all actions scheduled by regions or by local programs for the month that it addresses, in this case that is February.

Scheduled Date .... The date the investigation is scheduled to occur.

Action ..... The type of investigation to occur. This action section actually prints anything written into the Comments line beside the scheduled date.

Company Account & Name
This prints out the account number entered at the top of the SIS that scheduled the action and the company name corresponding to that ID number.

Investigation Date The date of the investigation that resulted in an action being scheduled.

APPENDIX D
DOH Incinerator Card File

CANDELARI FOOD MARKET
9711 WALLISVILLE RD

NEW INCR. PLANS APPROVED	21 MAY 74
PERMITTED	1 AUG 74
REPERMITTED	1 AUG 75
REPERMITTED	1 AUG 76
REPERMITTED	1 AUG 77
REPERMITTED	1 AUG 78

APPENDIX D
SIP Inspection Schedule Log
January 1979

COMPANY	ACCOUNT #	Date of SIP	SUPERVISOR	ENGINEER ASSIGNED
Major Sources				
Smith Industries (I)	HG-0664-G	1-17-78	Corbin	Shan Siddiqi
Cameron Iron (I)	HG-0115-V	1-18-78	Corbin	Bob Dwivedi
American Rice (III)	HG-0024-C	1-19-78	Hyde	Hal Nichols
IMCO (IV)	HG-0392-Q	10-6-78	Stahl	Hal Nichols
Stauffer Chemical Co. (II)	HG-0697-O	1-17-78	New	Bob Dwivedi
Parker Bros. (Navigation) (II)	HG-0552-S	3-16-78	New	Wayne Theiss
Owens-Corning (Fry-Volney) (IV)	HG-0779-L	1-5-78	Stahl	Shan Siddiqi
Minor Sources				
N. L. Industries (I)	HG-0517-U	12-1-77	Corbin	Wayne Theiss
Dixie Plating (II)	HG-0200-G	2-17-78	New	Bob Dwivedi
Hunt Engineering (IV) (Geosource)	HG-0382-T	1-5-78	Stahl	Hal Nichols

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APPENDIX E

SUMMARY OF TACB REGULATIONS PERTAINING TO STATIONARY SOURCE COMPLIANCE

APPENDIX E
TACB Regulations Pertaining to Stationary Source Compliance Summary

Regulations	Title	Topic
131.01.001	Definitions	Lists definitions for pollutants, processes, and control equipment.
131.01.005	Nuisance	Prohibits any person from discharging from any source air contaminants which may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property.
131.01.007	Notification Requirements for Major Upset	Requires notification of TACB as soon as possible of any major upset condition which causes or may cause excessive emissions.
131.01.008	Notification Requirements for Maintenance	Requires notification of TACB at least 10 days prior to any planned maintenance, start up or shut down which may cause excessive emissions.
131.01.009	Sampling	Requires sources upon request from TACB to sample to determine opacity, rate, composition, and/or concentration of emissions.
131.01.012	Exemptions from Rules and Regulations	Provides exemption from regulations during upset if after notification to TACB, a determination is made by the TACB that the upset conditions were unavoidable and that corrective measures were taken as soon as possible.
131.02.01	Procedural Rules	Provides for public hearings for variances, permits, regulation, rule-making, compliance, and adjudication
131.03.01	Outdoor Burning	Prohibits outdoor burning
131.03.03	Visible Emissions	Prohibits visible emissions from any stationary flue to exceed an opacity of 30 percent averaged over a 5-minute period, and 20 percent averaged over a 5-minute period for facilities which began construction after January 31, 1972. These opacity limits may be exceeded for sootblowing, building of a new fire, equipment changes, ash removal, or other maintenance related actions, but for no more than a 5-minute period.
131.03.03	Visible Emissions	Prohibits any person from causing or allowing excessive visible emissions from any building or enclosed facility.
131.03.05	Particulate Matter	Provides emission limitations which correspond to the flow rate of a facility. A stack height adjustment factor is used to give a more stringent emission limitation to those facilities with short stacks and poor dispersion characteristics. Less stringent emission limitations are not given for taller stacks.
131.03.05		Also requires that the net results of subtracting the downwind from the upwind ambient sample taken at a source's property line not exceed the following levels: - 100 micrograms averaged over 5 hours - 200 micrograms averaged over 3 hours - 400 micrograms averaged over 1 hour.

APPENDIX E
TACB Regulations

Regulation	Title	Topic
131.03.06	Transient Operations	Requires transient operations such as portable asphalt plants and concrete plants to install cyclones and wet scrubbers.
131.03.07	Agricultural Processes	Contains a process weight regulation applicable to all agricultural processes statewide.
131.04.01	Control of Sulfur Dioxides	Provides emission limitations which correspond to the flow rate of a facility. As with the particulate sources, a stack height adjustment factor is used to give a more stringent emission limitation to those facilities with short stacks and poor dispersion characteristics. For SO_2 emitters, specific types of sources are regulated. These include: - SO_2 plants burning elemental sulfur - SO_2 plants burning other than elemental sulfur - Nonferrous smelters - Steam generators, boilers, and heaters burning liquid fuel. Also requires continuous monitoring of primary smelters.
131.04.07	Allowable Ground Level Concentrations	Prohibits the net ground level concentration of emissions measured at the property line from exceeding .28 pounds per million averaged over any 30-minute period.
131.04.17	Area Control Plan—Application	Allows the TACB to exempt sources from the sulfur oxide emission limitations if technical practicability or economic reasonableness prevents compliance. For such an exemption, a source must install the best available control technology and an ambient monitoring network. In addition, all promulgated sulfur oxide ambient standards must be met.
131.07.01	Control of Air Pollution from Volatile Carbon Compounds	Equipment standard regulations which specify storage and use conditions and control devices to prevent evaporation. The regulation makes certain requirements for vapor recovery and specifies handling and discharge conditions.
131.08	Control of Air Pollution by Permits for New Construction or Modification	Requires new or modified facilities to obtain a construction permit and an operating permit prior to the construction or operation of the facility. The TACB has required that sources install the Best Available Control Technology (BACT) on all new and modified facilities since 1972. Emission limitations calculated on a facility basis are also required as part of the permit. This emission limitation is derived from the engineering calculations done by both state and local offices. This standard is more stringent than the emission limitation which applies generally to existing facilities. In addition to a source specific emission limitation, monitoring and reporting requirements are also imposed on new sources through the permits mechanism.

APPENDIX F

SUMMARY OF ENFORCEMENT TIME FRAMES FOR FIVE SAMPLE CASES

APPENDIX F
Enforcement Time Frames

Source: Company A - SO_2 Problem

9/22/76	NOV Filed
10/06/76	Citizen Complaint
11/29/76	Surveillance by DOH
12/17/76	Surveillance by DOH
12/28/76	Sampling
2/13/77	Plant Visit by DOH
2/14/77	Plant Visit by DOH
2/20/77	Citizen Complaint
2/22/77	Surveillance by DOH
3/04/77	Sampling
3/19/77	Citizen Complaint
3/31/77	Surveillance by DOH
4/05/77	Sampling
4/06/77	Sampling
4/12/77	Surveillance by DOH
4/25/77	Plant Visit by DOH
5/08/77	Plant Visit by DOH
5/15/77	Surveillance by DOH
5/16/77	Plant Visit by DOH
5/29/77	Plant Visit by DOH
6/05/77	Surveillance by DOH
6/12/77	Plant Visit by DOH
6/13/77	Plant Visit by DOH
6/16/77	Sampling
6/19/77	Plant Visit by DOH
6/21/77	Sampling
7/29/77	Sampling
8/04/77	Source Surveillance by DOH
8/23/77	Sampling
9/22/77	Surveillance by DOH
10/03/77	Citizen Complaint
10/06/77	Citizen Complaint
11/08/77	SIP Inspection
12/02/77	Sampling
12/07/77	Conference with Source at DOH
12/27/77	Citizen Complaint
1/01/78	Surveillance by DOH
1/19/78	Civil Case Referred to Legal
3/09/78	Sampling

APPENDIX F
(Continued)

3/15/78	SIP Inspection
3/19/78	Citizen Complaint
3/24/78	Sampling
4/11/78	Surveillance by DOH
4/26/78	Sampling
4/17/78	Surveillance by DOH
5/4/78	Sampling
5/15/78	Sampling
7/09/78	Sampling
8/10/78	Civil Case Filed by Legal

Company A is currently negotiating an out of court settlement with the City Attorney's office.

APPENDIX F
Enforcement Time Frames

Source: Company B - Odor Problem

11/08/74	1st Notice of Violation
5/06/75	Case Prepared
6/17/75	Civil Judgement - $500 Fine
10/01/76	Citizen Complaint
10/12/76	Citizen Complaint
10/18/76	Citizen Complaint
10/26/76	Surveillance by DOH
10/27/76	Citizen Complaint
11/08/76	Citizen Complaint
12/20/76	Sampling by DOH
1/20/77	Surveillance by DOH
2/10/77	Citizen Complaint
3/30/77	Conference
4/25/77	Plant Visit
6/08/77	SIP Inspection
6/27/77	Sampling
8/10/77	Citizen Complaint
8/19/77	Source Surveillance
9/29/77	Civil Fine - $2000
10/05/77	Citizen Complaint
1/04/78	Sampling
1/06/78	Civil Case Referred to Legal
1/10/78	Citizen Complaint
3/16/78	Sampling
4/12/78	SIP Inspection
4/13/78	Sampling
5/04/78	Citizen Complaint
5/16/78	Surveillance by DOH
7/13/78	Sampling by DOH
8/23/78	Surveillance by DOH
8/31/78	Conference

In January of 1979, Company B submitted a new control plan that DOH estimates will take three months to complete. The City Legal department is holding this case until additional information is submitted.

APPENDIX F
Enforcement Time Frames

Source: Company C - Odor Problem

1975	$500 Fine Criminal Violation
9/20/76	Sampling by DOH
9/23/76	Sampling by DOH
10/26/76	Sampling by DOH
11/04/76	Surveillance by DOH
11/08/76	Notice of Violation Issued
11/08/76	Sampling by DOH
11/11/76	Citzen Complaint
1/04/77	Sampling by DOH
1/31/77	Sampling by DOH
2/18/77	Notice of Violation Issued
2/18/77	Citizen Complaint
3/14/77	Sampling by DOH
11/06/77	Citizen Complaint
6/15/77	Citizen Complaint
9/22/77	Sampling by DOH
10/03/77	Citizen Complaint
11/03/77	Complaint Received
12/13/77	Complaint Received
12/15/77	Administrative Conference
12/21/77	Upset and Maintenance Violation
1/12/78	SID Inspection
1/14/78	Criminal Case Referred to Legal
1/27/78	Citizen Complaint
3/13/78	Citizen Complaint
3/14/78	Citizen Complaint
3/21/78	Administrative Conference
4/1/78	Citizen Complaint
4/18/78	Citizen Complaint
4/18/78	Citizen Complaint
8/28/78	Citizen Complaint
9/20/78	Addendum to Criminal Case
1/03/79	Addendum to Criminal Case

In February of 1979, the City Legal Department returned this case to DOH for additional information.

APPENDIX F
Enforcement Time Frames

Source: Company D - PM Problem

2/26/76	1st Notice of Violation Issued
9/10/76	Sampling by DOH
9/15/76	Citizen Complaint
9/17/76	Citizen Complaint
9/20/76	Sampling by DOH
9/24/76	Citizen Complaint
10/14/76	Surveillance by DOH
12/16/76	Surveillance by DOH
12/29/76	Citizen Complaint
1/07/77	Notice Issued
1/26/77	Sampling by DOH
2/02/77	Sampling by DOH
3/29/77	Sampling by DOH
4/5/77	Notice Issued
5/17/77	Sampling by DOH
5/23/77	Plant Visit
6/28/77	Criminal Case Filed by DA - $500 fine
7/21/77	Citizen Complaint
7/27/77	Surveillance by DOH
9/22/77	SIP Inspection
9/23/77	Citizen Complaint
9/28/77	Citizen Complaint
9/30/77	Citizen Complaint
12/07/77	Sampling by DOH
4/13/78	Conference with Source
4/28/78	Citizen Complaint
1/06/78	Civil Case Filed
6/22/78	Sampling by DOH
8/06/78	Surveillance by DOH
8/29/78	SIP Inspection
1/03/79	Civil Case Addendum

This company has purchased a baghouse but had not installed it. In February 1979, approval was obtained by the City Council to file a civil case.

APPENDIX F
Enforcement Time Frames

Source: Company E - PM Problem

2/28/74	1st Notice of Violation
3/05/74	Conference
8/26/75	Civil Case Prepared
10/24/75	Case Addendum Prepared
11/13/75	Case Addendum Prepared
2/26/76	Case Addendum Prepared
3/16/76	Case addendum Prepared
3/24/76	Council Permission to File Case
10/1/76	Citizen Complaint
10/28/76	SIP Inspection
11/02/76	Citizen Complaint
1/26/77	Sampling
2/07/77	Citizen Complaint
3/17/77	Surveillance
4/04/77	Citizen Complaint
6/03/77	Surveillance
6/08/77	SIP Inspection
6/09/77	Citizen Complaint
7/11/77	Citizen Complaint
7/12/77	Addendum Referred to Legal
7/22/77	Citizen Complaint
8/19/77	Surveillance by DOH
9/15/77	Citizen Complaint
10/05/77	Citizen Complaint
10/10/77	Citizen Complaint
12/19/77	SIP Inspection
2/16/78	Citizen Complaint
12/19/78	Addendum Referred to Legal
12/19/78	SIP Inspection
3/02/78	Citizen Complaint
3/13/78	Sampling
4/25/78	Citizen Complaint
6/29/78	Citizen Complaint
8/15/78	Citizen Complaint
8/17/78	Citizen Complaint

The City Attorney is currently holding this case until the installation of a baghouse is completed.

APPENDIX G
Cases, Sanctions, and Compliance
Status of all DOH Cases from 1975-1978

Company[1]	Source Type	Case Type	Problem	Case Preparation Date[2]	Legal Review Date[3]	Case Disposition	Present Compliance Status[4]
1975 A	Major	Civil	PM	February 1974	Unavailable	Permanent Injunction $25,000 Fine 2/75	Compliance
B	Major	Civil	Odor	Six Months from Preparation to Fine	Unavailable	Permanent Injunction $3,750 Fine 6/6/75	Shut Down
C	Major	Civil	Odor	unavailable	Unavailable	Permanent Injunction $5,000 Fine 6/17/75	Compliance Status Varies
D	Major	Criminal	Odor	unavailable	Unavailable	$500 Fine August/1975	Compliance
E	Major	Criminal	Odor	unavailable	Unavailable	$500 Fine	Out of Compliance
F	Other	Criminal	Odor	unavailable	Unavailable	$500 Fine $500 Fine	Out of Business
1976 A	Other	Criminal	Incinerator Malfunction	4/12/76	5/05/76	Not Filed	Compliance Company Installed Baghouse
B	Other	Criminal	PM	4/14/76	5/05/76	Dismissed	Compliance

1. Letters are used to protect the anonymity of the companies pending legal action.
2. Date of final case preparation and referral to Houston Legal Department.
3. Date of review by the Houston Legal Department.
4. Status of compliance presently, according to the Enforcement Division of the Houston DOH.

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APPENDIX G
(continued)

Company	Source Type	Case Type	Problem	Case Preparation Date	Legal Review Date	Case Disposition	Present Compliance Status
C	Minor	Criminal	Visible	8/24/76	11/18/76	$350 Fine	Compliance
D	Minor	Criminal	Outdoor Burning	5/03/76	11/18/76	Not Filed	Compliance
E	Major	Criminal	Visible	10/21/76	11/18/76	$250 Fine	Compliance
F	Minor	Criminal	Outdoor Burning	9/30/76	11/18/76	Dismissed	Compliance
G	Major	Civil	Visible	10/21/76	11/18/76	Not Filed	Out of Business
1977 A	Major	Civil	Visible	Unavailable	5/05/77	$2,000 Fine	Non Compliance Company installed Bag-House
B	Other	Civil	Odor	Unavailable	5/05/77	Not Filed	Compliance
C	Major	Civil	PM	Unavailable	7/12/77	Not Filed	Non Compliance
D	Major	Criminal	PM	Unavailable	9/12/77	Not Filed	Compliance
E	Minor	Criminal	Visible	Unavailable	8/10/77	Not Filed	Out of Business
F	Major	Criminal	PM & SO_2	Unavailable	11/07/77	Filed	Non Compliance
1978 A	Major	Not Assigned	PM	Unavailable	1/06/78	Not Filed	Compliance
B	Major	Not Assigned	Visible	Unavailable	1/06/78	Not Filed	Non Compliance
C	Minor	Not Assigned	Outdoor Burning	Unavailable	1/06/78	Not Filed	Compliance

APPENDIX G
(continued)

Company	Source Type	Case Type	Problem	Case Preparation Date	Legal Review Date	Case Disposition	Present Compliance Status
D	Other	Criminal	Nuisance	10/20/75	12/03/75	Dismissed	Out of Business
E	Other	Criminal	Nuisance	11/04/75	12/03/75	Dismissed	Compliance
F	Other	Criminal	Nuisance	9/21/76	12/03/75	$300 Fine	Compliance
G	Other	Criminal	Nuisance	11/11/76	12/03/75	$100 Fine	Compliance
H	Major	Criminal	Odor	2/05/76	12/03/75	$500 Fine	Non Compliance
I	Other	Criminal	Excessive Visible	1/20/76	12/03/75	$500 Fine	Non Compliance
J	Other	Criminal	Odor	9/23/75	12/03/75	Dismissed	Compliance
K	Other	Criminal	Excessive Visible	2/04/76	12/03/75	Not Filed	Compliance
L	Major	Civil	Odor	2/03/76	11/18/76	Not Filed	Compliance
M	Major	Civil	Excessive Visible	2/16/76	5/05/76	Not Filed	Compliance
N	Other	Civil	PM	2/27/75	12/03/76	Not Filed	Compliance
O	Major		Excessive Visible	3/16/76	12/03/75	Not Filed	Non Compliance
P	Major	Civil	Excessive Visible	2/10/76	12/03/75	Not Filed	Compliance
Q	Other	Civil	Odor	10/01/76	11/18/76	Not Filed	Compliance
R	Minor	Criminal	PM	9/28/76	11/18/76	$500 Fine	Non Compliance
S	Major	Civil	Excessive Visible	7/19/76	11/18/76	Not Filed	Out of Business
T	Other	Criminal	PM	8/06/76	11/18/76	$350 Fine	Compliance
U	Other	Civil	Odor	9/07/76	11/18/76	Not Filed	Compliance

APPENDIX G
(continued)

Company	Source Type	Case Type	Problem	Case Preparation Date	Legal Review Date	Case Disposition	Present Compliance Status
V	Major	Criminal	PM	2/12/76	5/05/76	Not Filed	Company Out of Business
W	Major	Civil	Odor	1/26/76	5/05/76	Not Filed	Compliance
X	Major	Criminal	Excessive Visible	3/01/76	5/05/76	$250 Fine	Compliance
Y	Other	Criminal	Odor	2/26/76	5/05/76	Not Filed	Compliance
Z	Other	Criminal	Outdoor Burning	12/01/76	5/05/76	Not Filed	Compliance
AA	Other	Criminal	Incinerator	11/24/75	5/05/76	Not Filed	Compliance
BB	Other	Criminal	Odor	2/09/75	5/05/76	Not Filed	Compliance
CC	Other	Criminal	Incinerator	5/03/76	5/05/76	Not Filed	Shut Down
DD	Other	Criminal	Nuisance	2/26/76	5/05/76	$500 Fine	Compliance
EE	Other	Criminal	Incinerator	2/03/76	5/05/76	Not Filed	Compliance
FF	Other	Criminal		2/10/76	5/05/76	$150 Fine	Compliance
GG	Other	Criminal	Excessive Visible	2/11/76	5/05/76	Not Filed	Compliance
HH	Other	Criminal	Nuisance	12/23/75	5/05/76	$750 Fine	Compliance
II	Major	Civil	Excessive Visible	2/12/76	5/05/76	Not Filed	Non Compliance Company agreed to schedule
JJ	Major	Criminal	SO_2	9/30/76	11/18/76	Filed - No Distribution	Non Compliance

APPENDIX G
(continued)

Company	Source Type	Case Type	Problem	Case Preparation Date	Legal Review Date	Case Disposition	Present Compliance Status
KK	Minor	Not Assigned	PM	Unavailable	1/06/78	Not Filed	Compliance
LL	Major	Not Assigned	Odor	Unavailable	1/19/78	Not Filed	
MM	Major	Not Assigned	SO_2	Unavailable	1/19/78	Filed 10/78	Non Compliance
NN	Major	Not Assigned	Property Line	Unavailable	1/19/78	Not Filed	Non Compliance
OO	Minor	Not Assigned	PM	Unavailable	1/19/78	Not Filed	Compliance
PP	Minor	Not Assigned	PM	Unavailable	1/19/78	Not Filed	Compliance
QQ	Major	Not Assigned	PM	Unavailable	1/25/78	Not Filed	Compliance
RR	Other	Not Assigned	-	Unavailable	1/25/78	Not Filed	Out of Business
SS	Other	Not Assigned	Incinerator	Unavailable	2/03/78	Not Filed	Non Compliance
TT	Major	Not Assigned	Property Line	Unavailable	3/21/78	Not Filed	Non Compliance
UU	Major	Not Assigned	Odor	Unavailable	9/20/78	Not Filed	Non Compliance
VV	Major	Not Assigned	Visible	Unavailable	9/20/78	Not Filed	Non Compliance